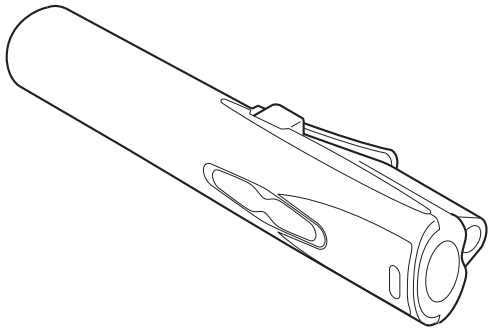
MC-S50

SERVICE MANUAL

AEP Model

Ver 1.0 2001.03



SPECIFICATIONS

Audio specifications

Frequency response
20 – 20,000 Hz
Signal-to-noise ratio (S/N)
85 dB

Memory capacity

64 MB (including the system software: 61.1 MB available for music)

Available file format

ATRAC3
MP3
Bit rate*: 32–256 kbps
Sampling rate: 32/44.1/48 kHz
* Variable bit rate files are not supported. Bit rate higher than 128 kbps is not guaranteed when you select the sampling rate 32 or 48 kHz.
WMA**
Bit rate: 64–160 kbps
**The files applied with the Microsoft Windows Media Right Manage are not supported.

Output

Headphones jack
Stereo mini jack

Connector (special mini jack)

USB 1.0 compliant

General

Power requirements
LR03 (Size AAA) alkaline battery × 1
USB bus power
Battery life
Approx. 6 hours (varies depending on bit rate, volume, etc.)
Power consumption
Approx. 145 mW
Dimensions (approx.)
Approx. 22.4 × 99.0 × 25.9 mm ($^{29}/_{32}$ × 4 ×1 inches) (w/h/d)
Mass
Approx. 33g (1.2 oz) (including battery)
Operating temperature
5°C to 35°C (41°F to 95°F) (not condensed)
Environment temperature
–20°C to 60°C (–4°F to 140°F) (not condensed)

Supplied accessories

- LR03 (Size AAA) alkaline battery (1)
- Headphones (1)
- Headphones/earphones extension cord (1)
- Neck strap (1)
- USB cable (1)
- CD-ROM (OpenMG Jukebox installation disc) (1)
- MC-S50 Operating Instructions (1)
- OpenMG Jukebox Operating Instructions (1)

Design and specifications are subject to change without notice.

PERSONAL NETWORK PLAYER

9-873-098-11
2001C0500-1
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Sony Corporation
Audio Entertainment Group
General Engineering Dept.

SONY

TABLE OF CONTENTS

1. SERVICING NOTES 3

2. GENERAL 9

3. DISASSEMBLY

3-1. Disassembly Flow 10
3-2. Case Assy, Upper 10
3-3. Power Board 11
3-4. "LOGIC Board", "AUDIO Board", "FLEXIBLE (JACK) Board, Jack (J301)" 11
3-5. "LOGIC Board", "Display Panel, Liquid Crystal (LCD901)" 12

4. DIAGRAMS

4-1. Block Diagram 13
4-2. Note for Printed Wiring Boards and Schematic Diagrams 14
4-3. Printed Wiring Board – LOGIC Board – 14
4-4. Schematic Diagram – LOGIC Board – 15
4-5. Printed Wiring Board – AUDIO Board – 16
4-6. Schematic Diagram – AUDIO Board – 17
4-7. Printed Wiring Board – POWER Board – 18
4-8. Schematic Diagram – POWER Board – 19
4-9. IC Pin Function Description 22

5. EXPLODED VIEWS

5-1. Upper Case Assy 26
5-2. Board Assy 27

6. ELECTRICAL PARTS LIST 28

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 ˚C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 ˚C .
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

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SECTION 1
SERVICING NOTES

1-1. Introduction

This document describes the “operation check for inspection (Test mode)” and “adjustment after board replacement for repair”.
In performing these works, connect this set to the PC via a USB cable and use the following tool.

Tool list

Ref. No.	Tool name	Part code	Application
1	Service Tool 9140 (FD)	J-2507-037-1	Board check (Test mode) and readjustment after board replacement

1-2. Board Repair

1. In performing the work, the set should be in a complete state (all components assembled).
2. Install the “OpenMG Jukebox” and “WMP7 Plug-in” (CD-ROM) in the PC in advance.
3. Do not start up other applications in the PC.
4. This set has the Test mode, and the use of exclusive application (Service Tool) on the PC side enables various function checks and the voltage adjustment.
5. For the LOGIC board in this set, if either part listed in Table 1 is faulty, be sure to replace the board block. Also, when a part on the POWER board was replaced or a combination of LOGIC board and POWER board was changed due to the board replacement, perform 1-5 "Adjustment When Board was Replaced/Repaired".
6. The data in Table 1-2 have been written to the LOGIC board.
7. In repairing other than above parts, repair as usual.

Table 1-1.

Board name	Ref. No
LOGIC board	IC601, IC602, IC603, IC901

Table 1-2.

Board name	Stored data
LOGIC board	Music data, Battery adjustment value, Equalizer initial values, CODEC programs, and ID/IK codes

1-3. Operation Check for Inspection (Test Mode)

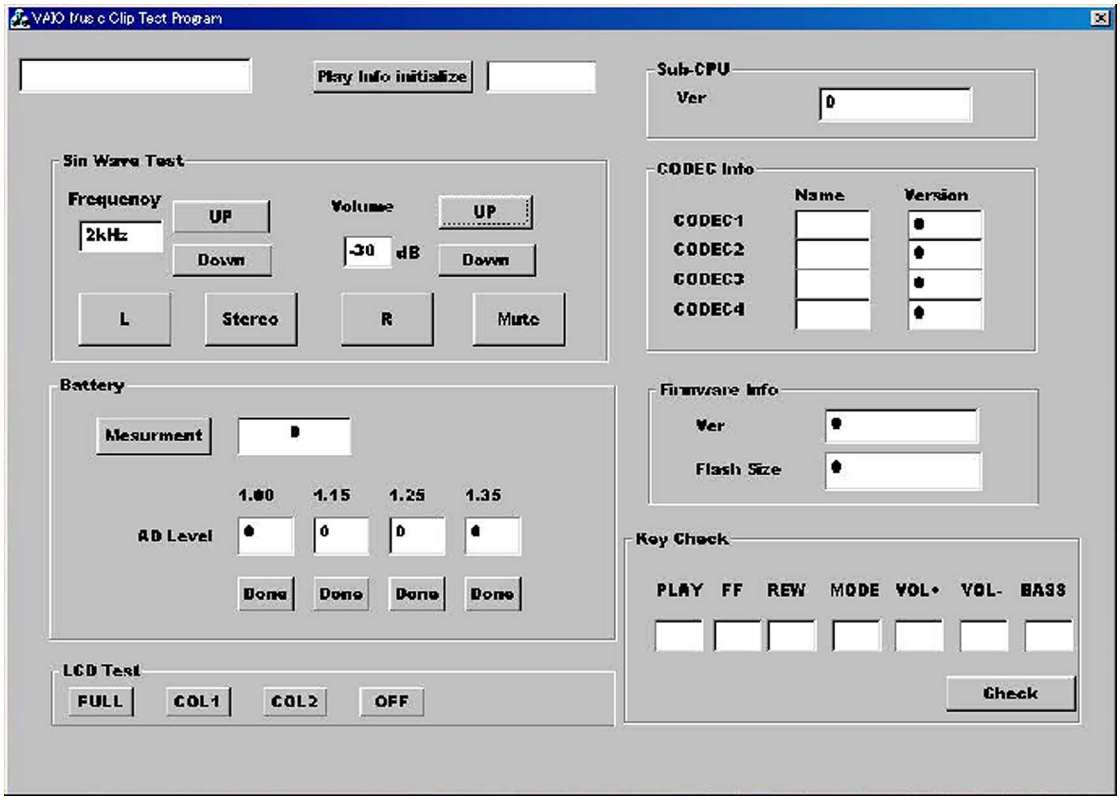
Precautions

1. Be sure to remove the battery from this set. (The power is supplied via USB cable)
   Operating the set in the Test mode with the battery loaded could clear necessary information.
2. If operation check was performed for inspection, execute “Play Info Initialize” in ⑬ (see page 7) to return respective functions to initial positions (see Table 1-5 on page 7). In such a case, record current position of each function before executing “Play Info Initialize” in ⑬, if necessary.

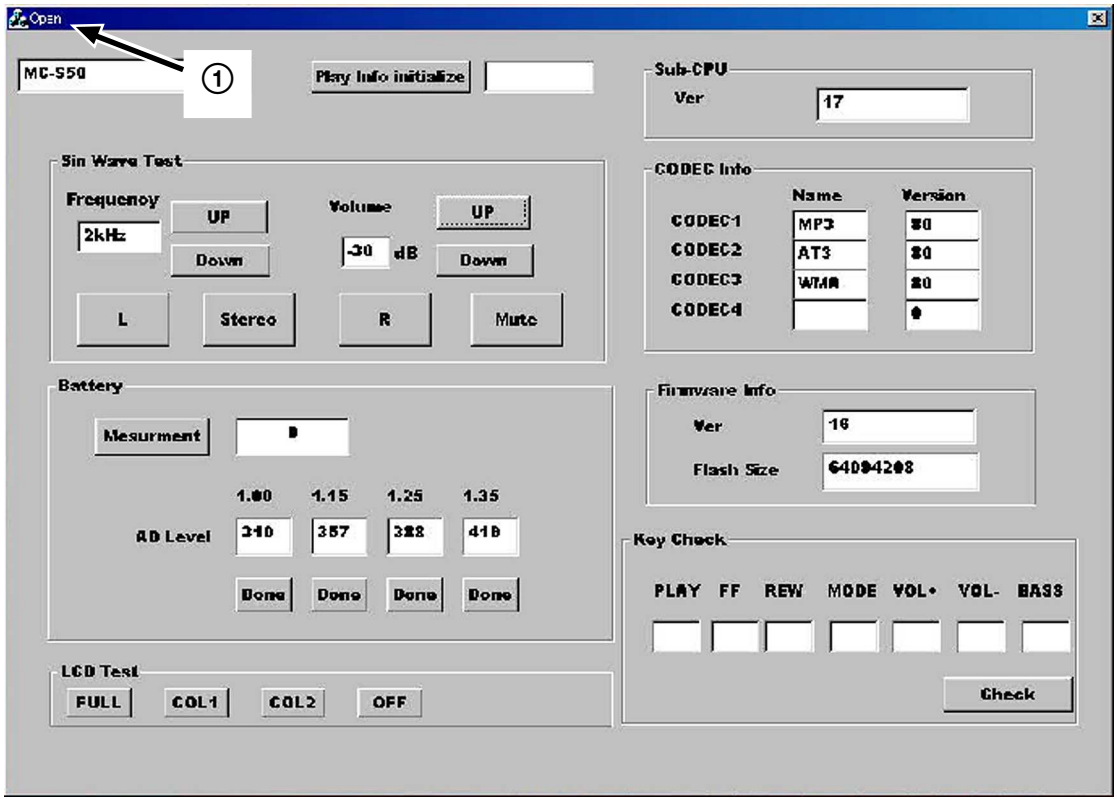
Work procedure

Preparation:

1. Make sure that no battery is loaded in the set.
2. Start up the test mode “apollo_service.exe” of the service tool (J-2507-037-1) from the PC, and check that the following screen appears.

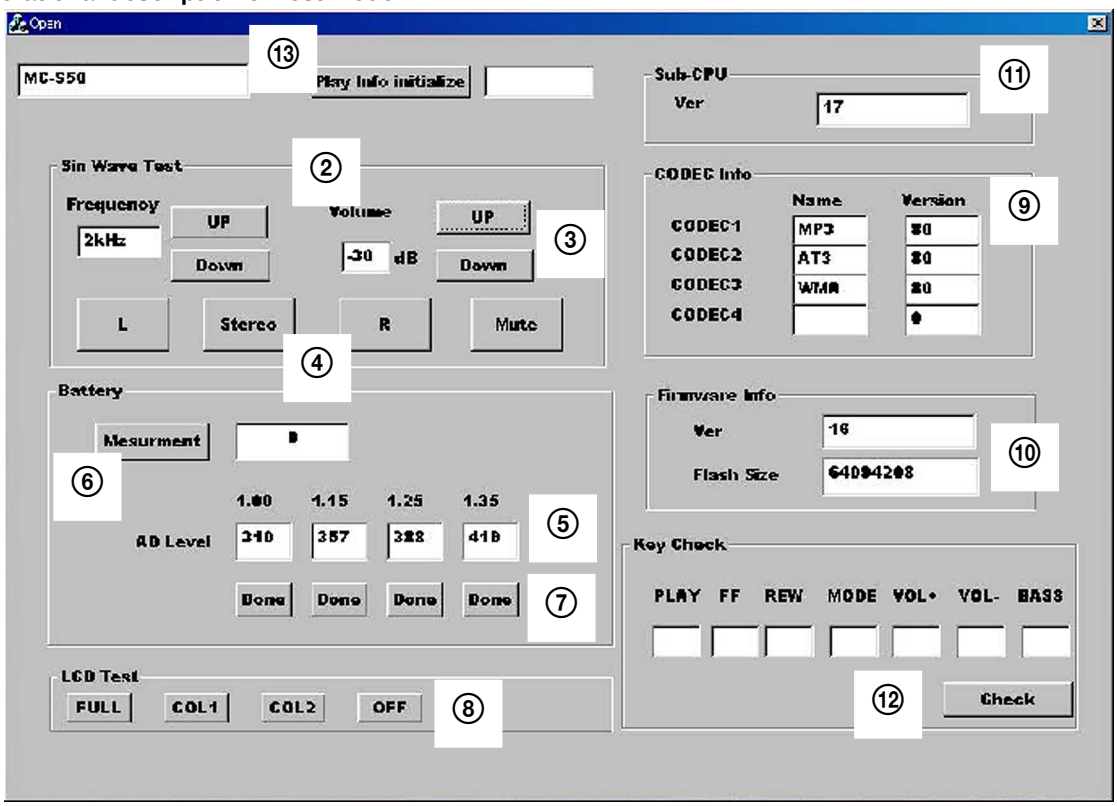


3. Connect PC to this set with a USB cable. Check that the block ① of the following screen “open”, and “1PC” is displayed on the LCD of the set. (The block ① will “close” if the set is disconnected again)
   At this time, a sine wave is outputted from the headphone. Also, the model name is displayed in the block ⑬ of the screen.



Note: If the block ① does not “open”, the circuits in LOGIC board will be faulty. Audio signals are outputted from the reference signal in the DSP of the set.

Operational description of Test mode



1. Audio Block Function Check

Clicking the UP or Down button in block ② of the screen allows you to check with various output frequencies. Also, clicking the UP or Down button in block ③ can check variations of volume. Clicking the L, Stereo, R, or Mute button in block ④ can change audio output status.

2. Battery Threshold Value Reading and Measurement

Connect an exclusive USB cable to the set, and available battery threshold values (converted values corresponding to voltage values) written to the set at the shipment will be displayed at ⑤. (See Table 1-3)
These threshold values are inherent values of the set, but if they were readjusted during the board repair, newly set threshold values (converted values corresponding to voltage values) are displayed.

Table 1-3.

Condition	OFF	Scale 1→2	Scale 2→3	Scale 3→4
Voltage set value	1.00 V	1.15 V	1.25 V	1.35 V
Converted value (ref.)	320	368	400	432

Note: The threshold values (converted values corresponding to voltage values) are different every set.

3. LCD Test

Clicking FULL (full lit), COL1 (column 1), COL2 (column 2), or OFF (full off) in block ⑧ results in all ON, column 1 ON, column 2 ON, or all OFF of the LCD on the set respectively.

4. CODEC Info Check

The CODEC programs and their versions written to the set can be checked. (block ⑨)
The CODEC programs written to the set at the shipment are “MP3”, “ATRAC3”, and “WMA” and their versions are as listed below. (Versions will vary if updated)

Program No.	Name	Version
CODEC1	MP3	96
CODEC2	AT3	96
CODEC3	WMA	96
CODEC4	blank	0

5. Firmware Info Check

The DSP program version and the flash memory capacity can be checked. (block ⑩)
The version at the shipment is as follows. (Versions will vary if updated)

Version	51
Flash memory size	64094208

6. Sub-CPU Info Check

The Sub-CPU program version can be checked. (block ⑪)
The version at the shipment is as follows. (Versions will vary if updated)

Version	30

7. Key Check

Click the block ⑫ while pressing a key on the set, and "ON" is displayed in the block associated with the pressed key, so that the key operation can be checked.

1-4. Required System Configuration

- IBM® PC/AT® and compatibles

  CPU: MMX® Pentium® 233 MHz and above (Pentium II 400 MHz and above recommended)

  Hard disk drive space: 20 MB and above (Free space is required, depending on the version of Windows 98 and the size of the audio data you are using.)

  RAM: 64 MB and above

  CD-ROM drive

  Sound Board: Creative SoundBlaster 16 compatible

  Default built-in USB port

- Operating system: The default installation of Windows® 98 English version (The product does not work on Windows 95/3.1 or Windows NT. Not assured trouble-free if you use an upgrade version from Windows 95/3.1 to Windows 98.)
- Display: SVGA (800 × 600 pixel) (supports High Color (16 bit) and above)
- Internet access

1-5. Adjustment When Board was Replaced/Repaired

When a part on the POWER board was replaced due to the repair or a combination of LOGIC board and POWER board was changed due to the board replacement, perform 1. "Readjustment of Voltage for Battery Threshold Value" and 2. "Execution of Play Info Initialize" in [Work Procedure].
Replacing the board in this set will cause the status as shown in Table 1-4.

Table 1-4.

Board name	Set status after board replacement
LOGIC board	Music data and music information data stored in the set are cleared and not restored.

Precautions

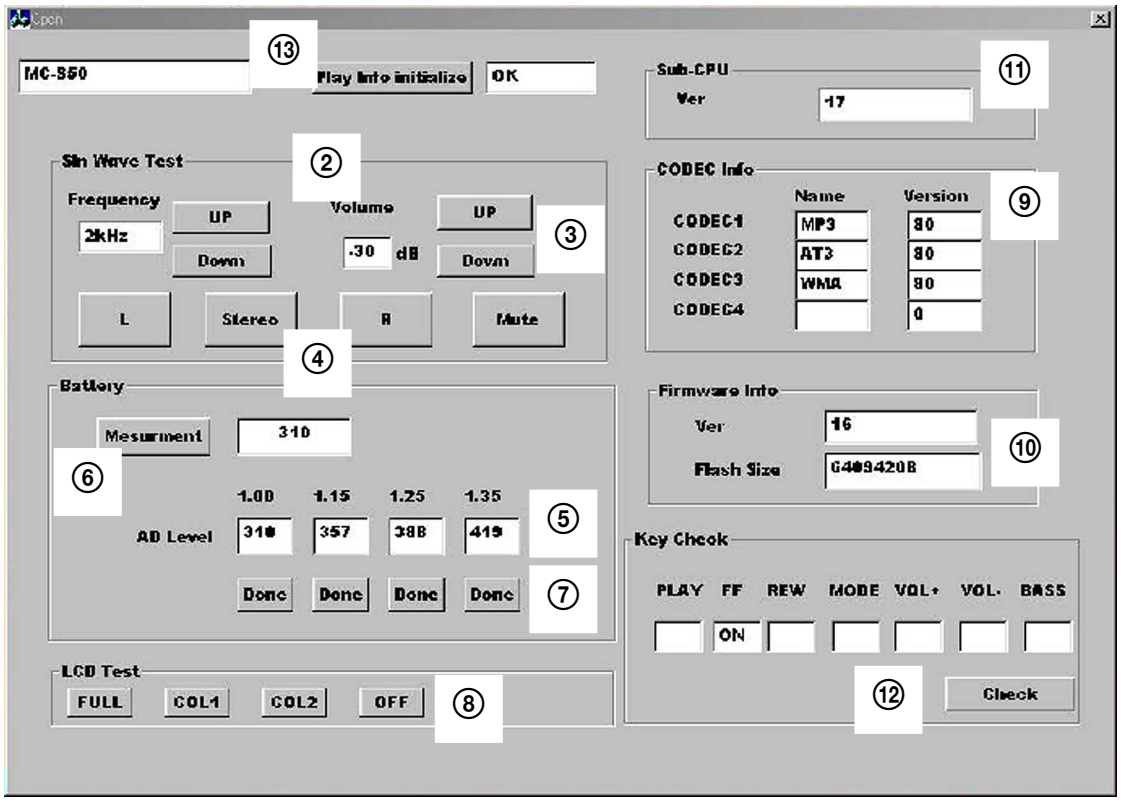
1. Do not disconnect the USB cable in the midway of work.
2. If the operation on the PC side is not accepted during work, disconnect the USB cable and close the "apollo_service.exe" file, then restart from the beginning.

Work Procedure

1. Readjustment of Voltage for Battery Threshold Value

Readjust the voltage through the steps given below.

(1) Start up the Test Mode "apollo_service.exe" in the Service Tool (J-2507-037-1) from the PC, and connect the set to the PC with an excusive USB cable, and the following screen will appear.
At this time, the battery threshold values of available voltage written to the board are displayed at ⑤.



(2) Apply the specified set voltage in Table 1-5 to the battery terminals from regulated DC power supply.
Then, click the button ⑥, and the converted values (threshold values) corresponding to the applied voltage will be displayed. Under this condition, click the button ⑦ and newly converted values (threshold values) will be written in the "AD Level" at ⑤.

(3) For each step in Table 5, apply the specified set voltage so as to write the converted value (threshold value).

Table 1-5.

Condition	OFF	Scale 1→2	Scale 2→3	Scale 3→4
Voltage set value	1.00 V	1.15 V	1.25 V	1.35 V
Converted value (ref.)	320	368	400	432

Note: The threshold values (converted values corresponding to voltage values) are different every set.

Precautions

1. The regulated DC power supply to be applied should have as less ripple as possible within the voltage accuracy +/–0.01 V.
2. Use properly calibrated measuring instrument for the measurement of voltage to be applied.
3. Do not solder directly the battery terminals when applying the voltage. Use clips, etc. to connect to the battery terminals.

2. Execution of Play Info Initialize

If the LOGIC board was replaced for repair, execute “Play Info Initialize” in block ⑬ to return respective functions to initial positions (see Table 1-6).

Table 1-6.

Function	Position
Play position	Head of first music
VOL level	25
MEGA BASS	OFF
PLAY MODE	OFF
AVLS	OFF

3. Checking after Repair

(1) After work, check that the set operates normally through the operation in 1-3. “Operation Check for Inspection (Test Mode)” (see page 3).

(2) Make sure that the check-out and check-in can be made using the PC applications “OpenMG Jukebox” (CODEC programs “MP3” and “ATRAC3”) and “Windows Media Player 7” (CODEC program “WMA”). Also, make sure that the checked out data can be played normally.

Note: Do not start up the “OpenMG Jukebox” and the “Windows Media Player 7” simultaneously.

(3) For an installation and acquisition method of “Windows Media Player 7” (CODEC program “WMA”), refer to the following instruction.

Using Music Clip player in combination with Windows Media™ Player 7

If you install Microsoft Windows Media™ Player 7, you can transfer a WMA file to your Music Clip player and play it back. Refer to the online help for Windows Media Player 7 for detailed operations.

Playing back WMA files with Music Clip player

Installing Windows Media Player 7 and the dedicated plug-ins

- Refer to Microsoft download website for the details on how to obtain Windows Media Player 7.
- To use Windows Media Player 7 in combination with your Music Clip player, you need to install the dedicated plug-in software. This software has been already installed when the NW-S4 driver was installed using the enclosed OpenMG Jukebox CD-ROM.

Transferring (copying) a WMA file to your Music Clip player

Music Clip player can only playback those WMA files that are listed in the "Available File Formats" in the "Options" dialog box on Windows Media Player 7 and are of 64 to 160 kbps.

Notes

- If you check "Enable Personal Rights Management" on the "CD Audio" tab in the "Options" dialog box when recording a CD using Windows Media Player 7, the music cannot be transferred to Music Clip player. To enable the music transfer, remove the check mark when recording the CD.
- It may be impossible to transfer the music contents with copyright management information such as those purchased via EMD.

Notes

- Songs checked-out using the OpenMG Jukebox (ATRAC3 and MP3) can also be listened on the Portable Device screen of Windows Media Player 7, but they can not be played back nor checked-in to Windows Media Player 7.
- The transferred (copied) WMA files to Music Clip player from Windows Media Player 7 are shown on the OpenMG Jukebox with a (🚫) mark and you can not playback nor check-in them to the OpenMG Jukebox.

1 Start Windows Media Player 7 and click on the "Portable Device" tab.

The "Portable Device" screen appears.

2 Connect your Music Clip player to the computer (See page 9).

The computer recognizes your Music Clip player and the songs downloaded in Music Clip player are shown on the "Music On Device" window of Windows Media Player 7. If the computer can not recognize your Music Clip player, press the F5 key.

3 Transfer (copy) the songs to your Music Clip player.

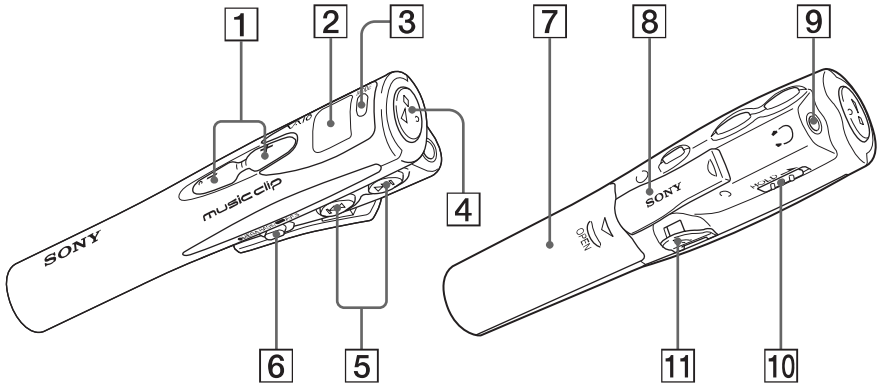
Select a WMA file you want to transfer (copy) to your Music Clip player and click on the "Copy Music" button on Windows Media Player 7 window.

This starts copying the selected song and its title is added to the "Music On Device" window.

Refer to the online help of Windows Media Player 7 for details on copying music to a portable device.

Parts and controls

Refer to the page numbers indicated in parentheses for details.

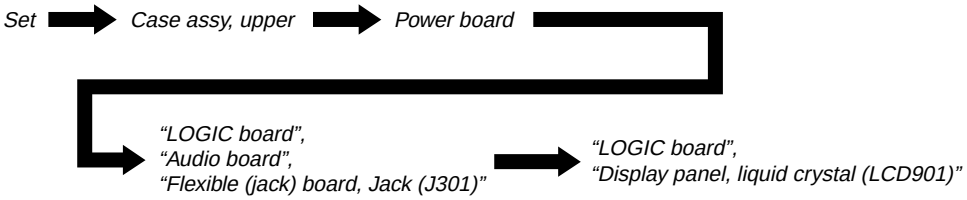


1 **VOL (volume) +/– (page 10)**
2 **Display (page 11)**
3 **MODE button (pages 12)**
4 **►/■ (play/stop) button (page 10)**
5 **I◄◄ /►►I buttons (pages 11)**
6 **MEGA BASS/AVLS button (page 13, 14)**
7 **Battery compartment (page 7)**
8 **Clip**
9 **Headphones jack (page 10)**
10 **HOLD switch (page 15)**
11 **USB connector (page 9)**

SECTION 3
DISASSEMBLY

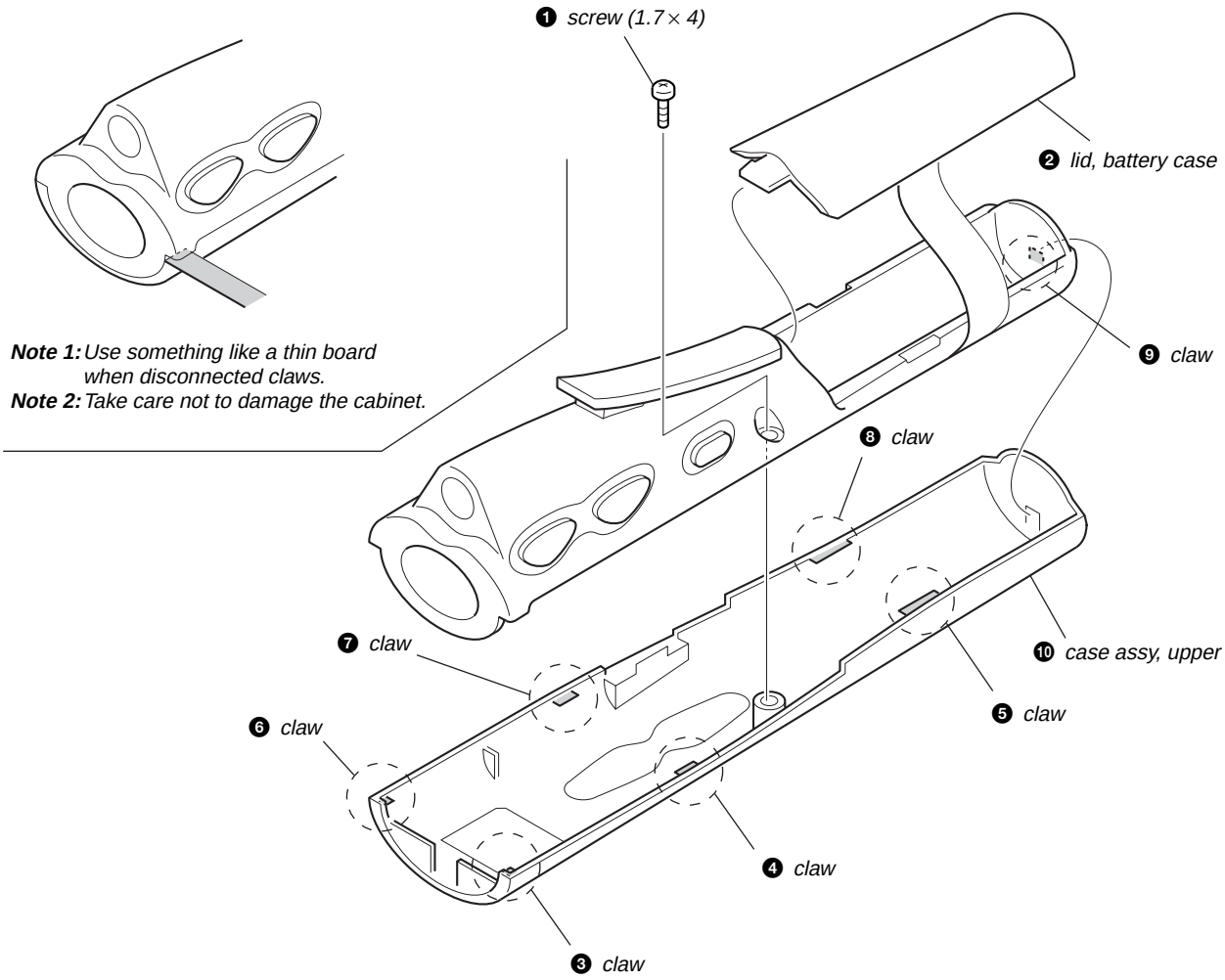
• This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

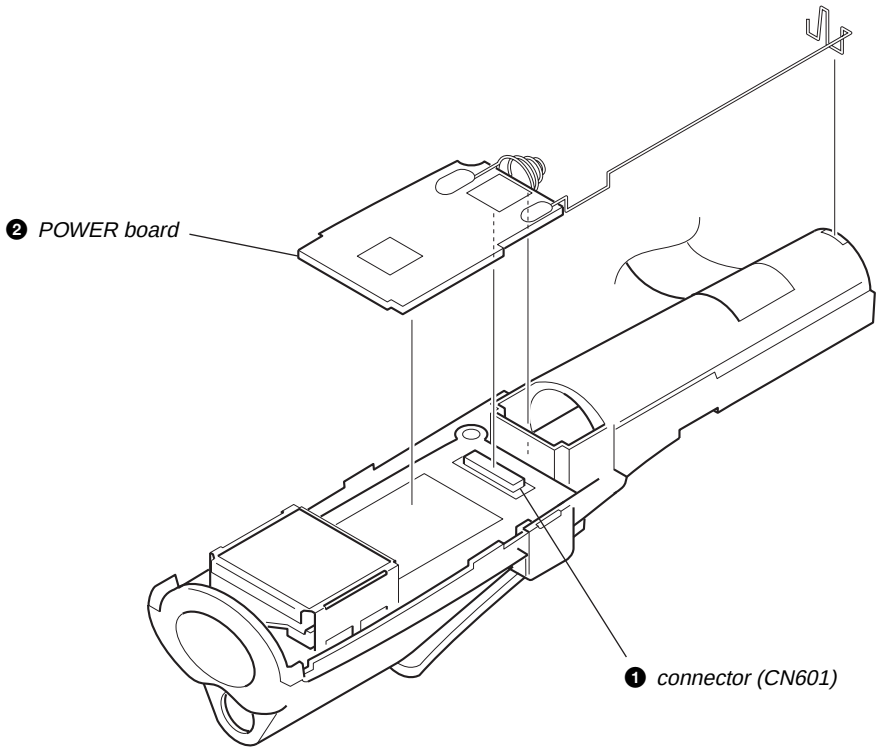


Note: Follow the disassembly procedure in the numerical order given.

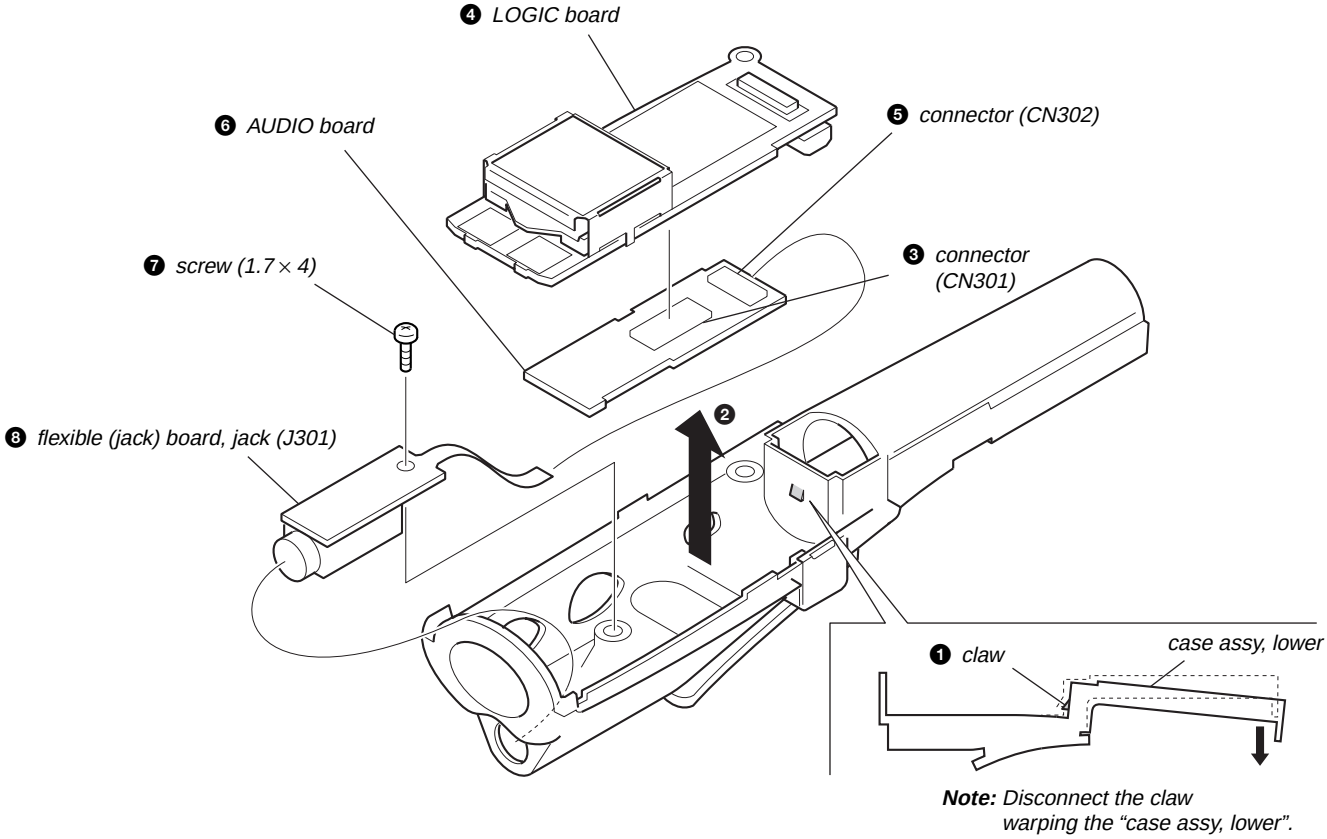
3-2. CASE ASSY, UPPER



3-3. POWER BOARD

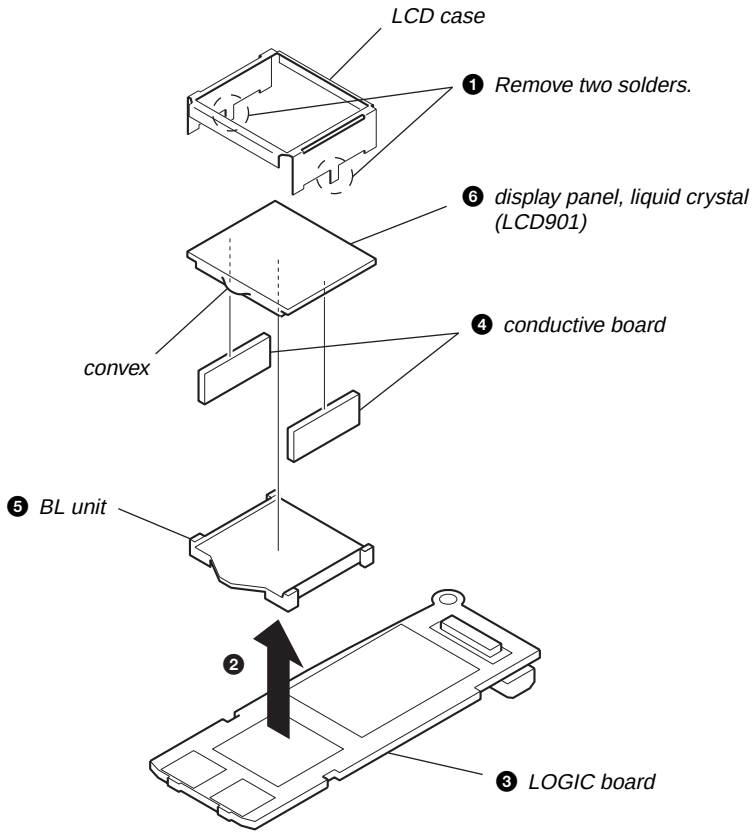


3-4. "LOGIC BOARD", "AUDIO BOARD", "FLEXIBLE (JACK) BOARD, JACK (J301)"



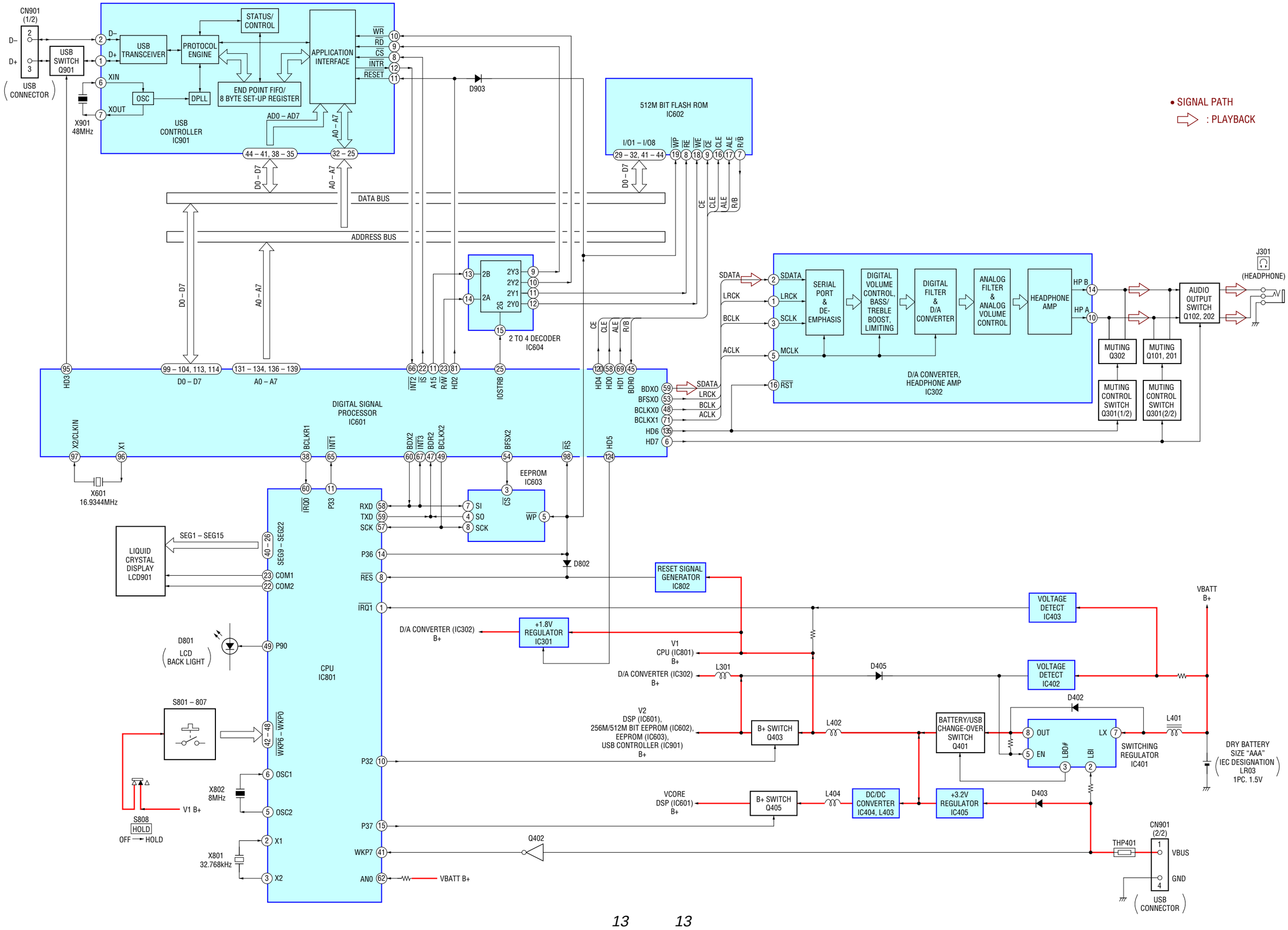
Note: *Disconnect the claw warping the "case assy, lower".*

3-5. “LOGIC BOARD”, “DISPLAY PANEL, LIQUID CRYSTAL (LCD901)”



SECTION 4
DIAGRAMS

4-1. BLOCK DIAGRAM



4-3. PRINTED WIRING BOARD – LOGIC Board – : Uses unleaded solder.

4-2. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

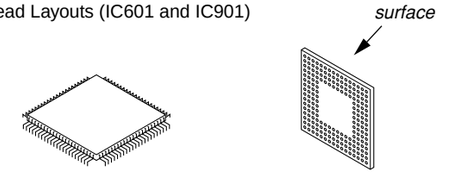
Note on Printed Wiring Board:
- ——— : parts extracted from the conductor side.
- △ : internal component.
- ▬ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:
Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

- AUDIO, LOGIC and POWER boards are multi-layer printed board.
  However, the patterns of intermediate-layer have not been included in this diagrams.

* Lead Layouts (IC601 and IC901)



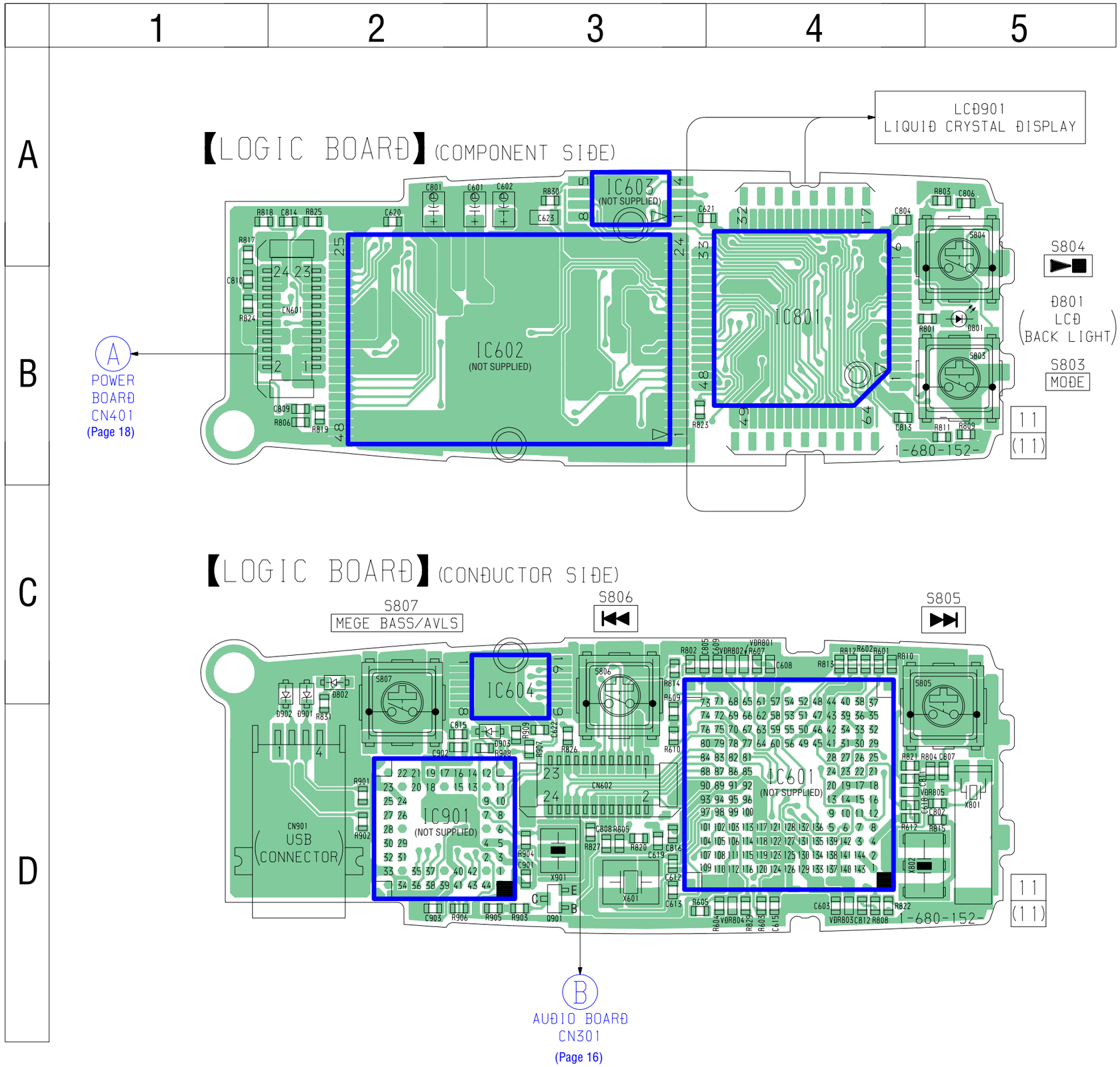
Lead layout of conventional IC — CSP (chip size package)

Note on Schematic Diagram:
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.
- ▬ : B+ Line.
- Power voltage is dc 1.5 V and fed with regulated dc power supply from battery terminal.
- Voltages and waveforms are dc with respect to ground in playback mode.
  no mark : PLAYBACK
  ＊ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : PLAYBACK

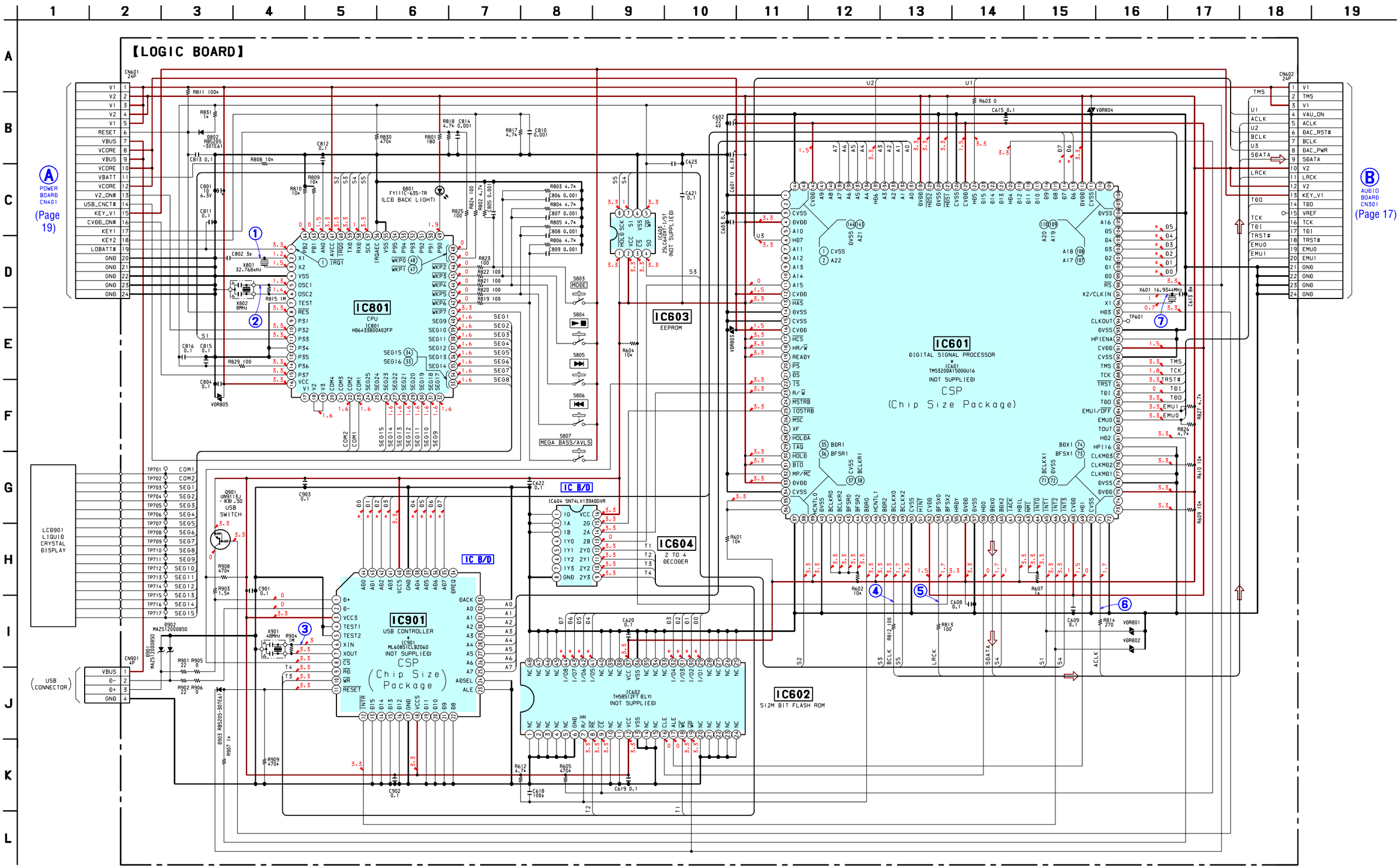
* The voltage and waveform of CSP (chip size package) cannot be measured, because its lead layout is different form that of conventional IC.

- **Semiconductor Location**

Ref. No.	Location
D801	B-5
D802	C-2
D901	C-2
D902	C-2
D903	D-3
IC601	D-4
IC602	B-3
IC603	A-3
IC604	C-3
IC801	B-4
IC901	D-2
Q901	D-3



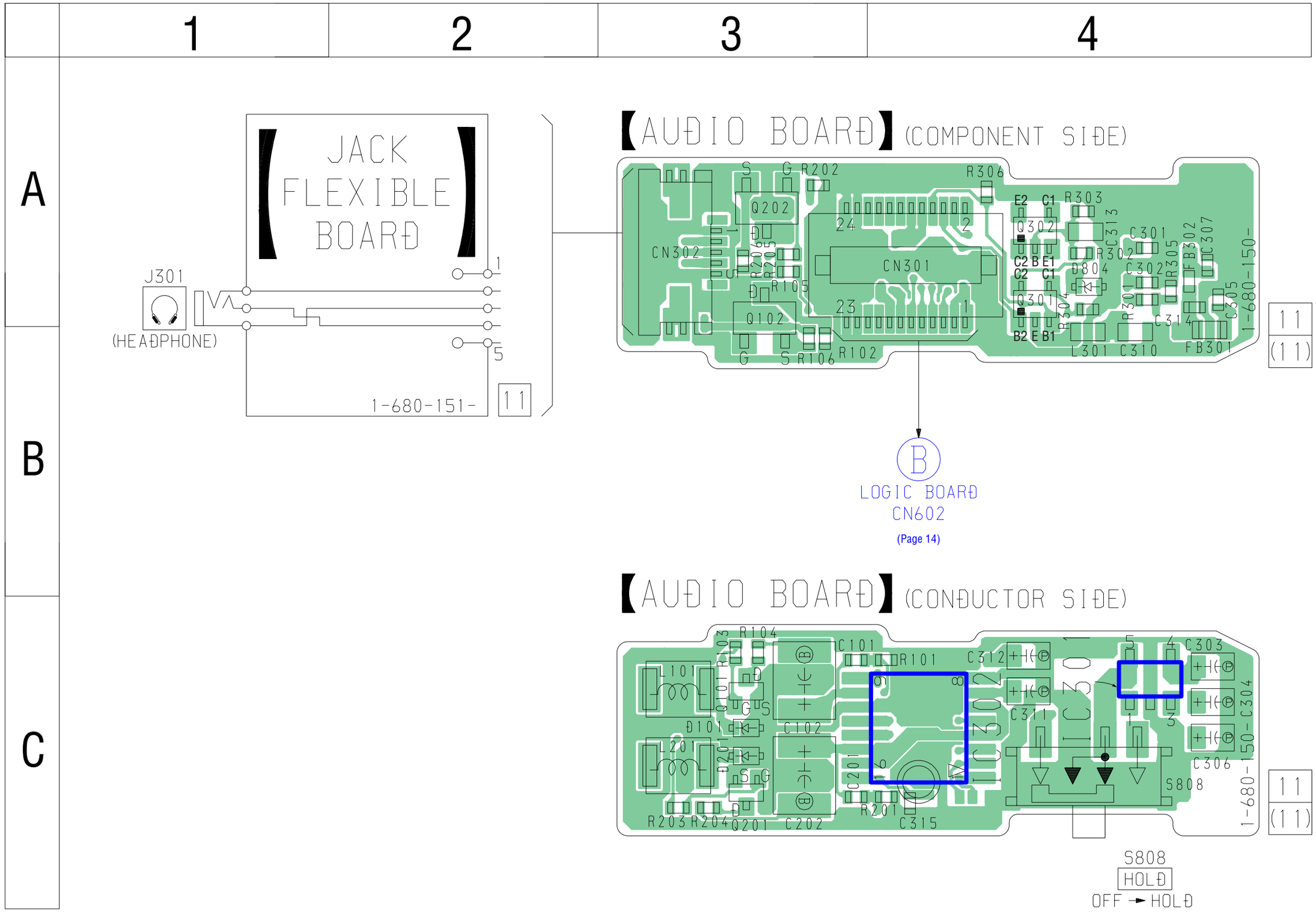
4-4. SCHEMATIC DIAGRAM – LOGIC Board – • See page 20 for IC Block Diagrams. • See page 21 for Waveforms.



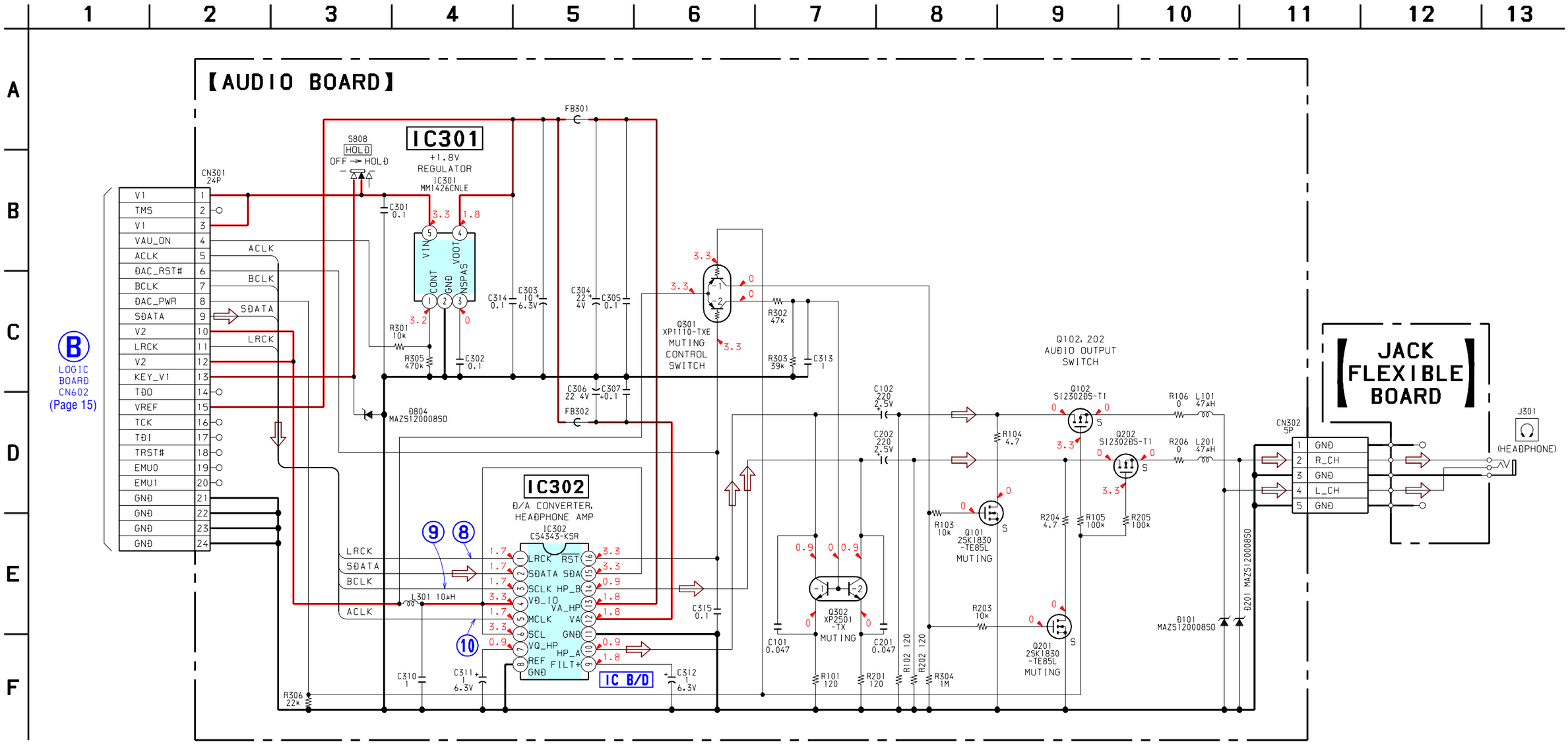
4-5. PRINTED WIRING BOARD – AUDIO Board – : Uses unleaded solder.

- **Semiconductor Location**

Ref. No.	Location
D101	C-3
D201	C-3
D804	A-4
IC301	C-4
IC302	C-4
Q101	C-3
Q102	A-3
Q201	C-3
Q202	A-3
Q301	A-4
Q302	A-4



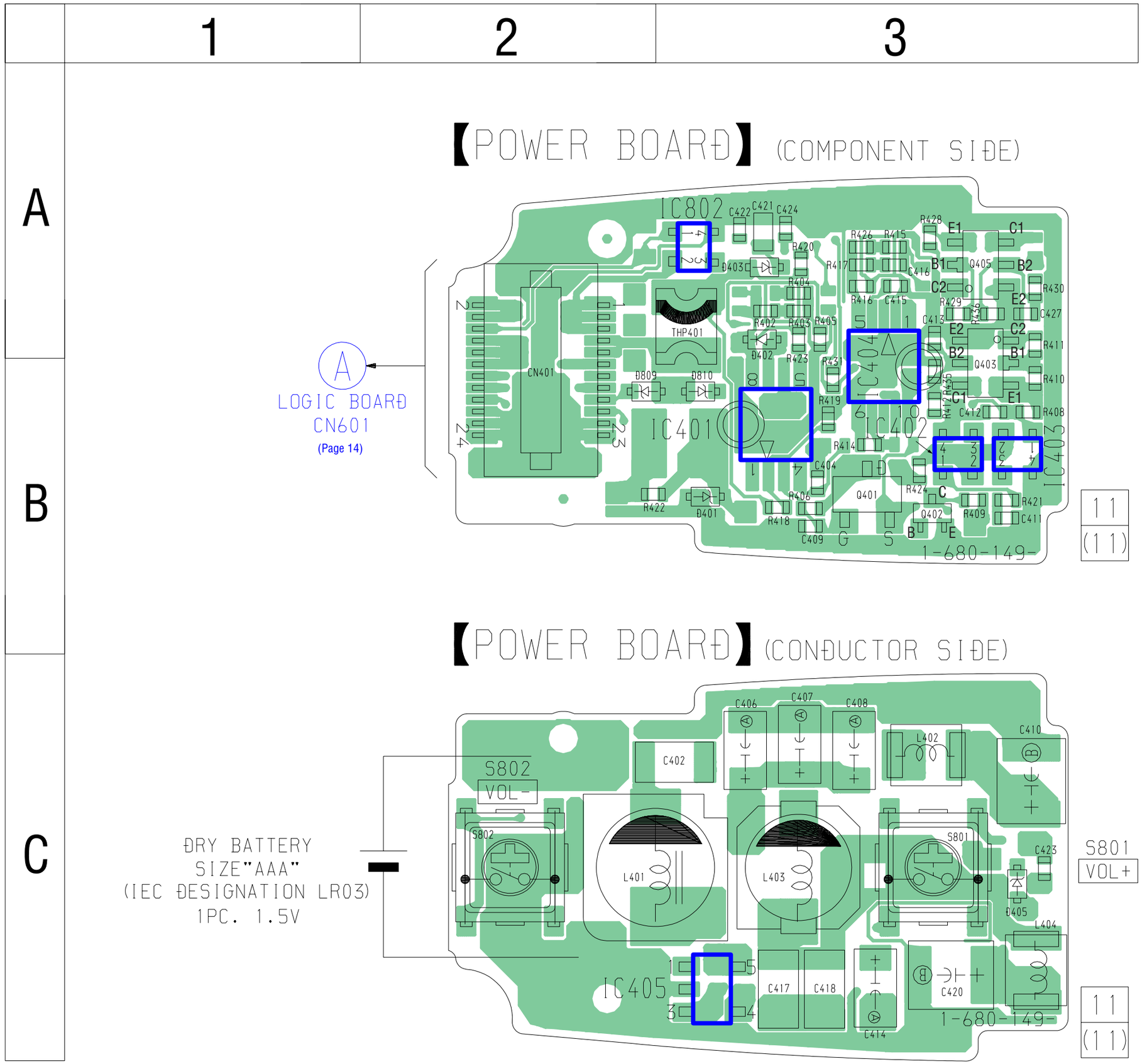
4-6. SCHEMATIC DIAGRAM – AUDIO Board – • See page 20 for IC Block Diagram. • See page 21 for Waveforms.


【AUDIO BOARD】
IC301
+1.8V REGULATOR
IC301 MM1426CNLE
IC302
D/A CONVERTER, HEADPHONE AMP
IC302 CS4343-KSR
IC B/D
S808 HOLD OFF → HOLD
CN301 24P
V1 TMS V1 VAU_ON ACLK DAC_RST# BCLK DAC_PWR SDATA V2 LRCK V2 KEY_V1 TDO VREF TCK TDI TRST# EMU0 EMU1 GND GND GND GND
ACLK BCLK SDATA LRCK
B LOGIC BOARD CN602 (Page 15)
FB301 FB302
C301 0.1 C302 0.1 C303 10 6.3V C304 22 4V C305 0.1 C306 22 4V C307 +0.1 C310 1 C311 1 6.3V C312 1 6.3V C313 1 C314 0.1 C315 0.1
R301 10k R302 47k R303 39k R305 470k R306 22k
D804 MAZS120008SO
Q301 XP1110-TXE MUTING CONTROL SWITCH
Q102, 202 AUDIO OUTPUT SWITCH
Q102 SI2302DS-T1
Q202 SI2302DS-T1
Q101 2SK1830 -TE85L MUTING
Q201 2SK1830 -TE85L MUTING
Q302 XP2501 -TX MUTING
C101 0.047 C201 0.047
C102 220 2.5V C202 220 2.5V
R101 120 R102 120 R201 120 R202 120
R103 10k R104 4.7 R203 10k R204 4.7 R105 100k R205 100k R206 0 R304 1M
L101 47µH L201 47µH
L301 10µH
D101 MAZS120008SO D201 MAZS120008SO
CN302 5P
1 GND 2 R_CH 3 GND 4 L_CH 5 GND
【JACK FLEXIBLE BOARD】
J301 (HEADPHONE)
LRCK SDATA BCLK ACLK
RST SDA HP_B VD_IO VA_HP MCLK VA SCL GND VQ_HP HP_A REF FILT+ GND
CONT GND VOUT VIN NSPAS

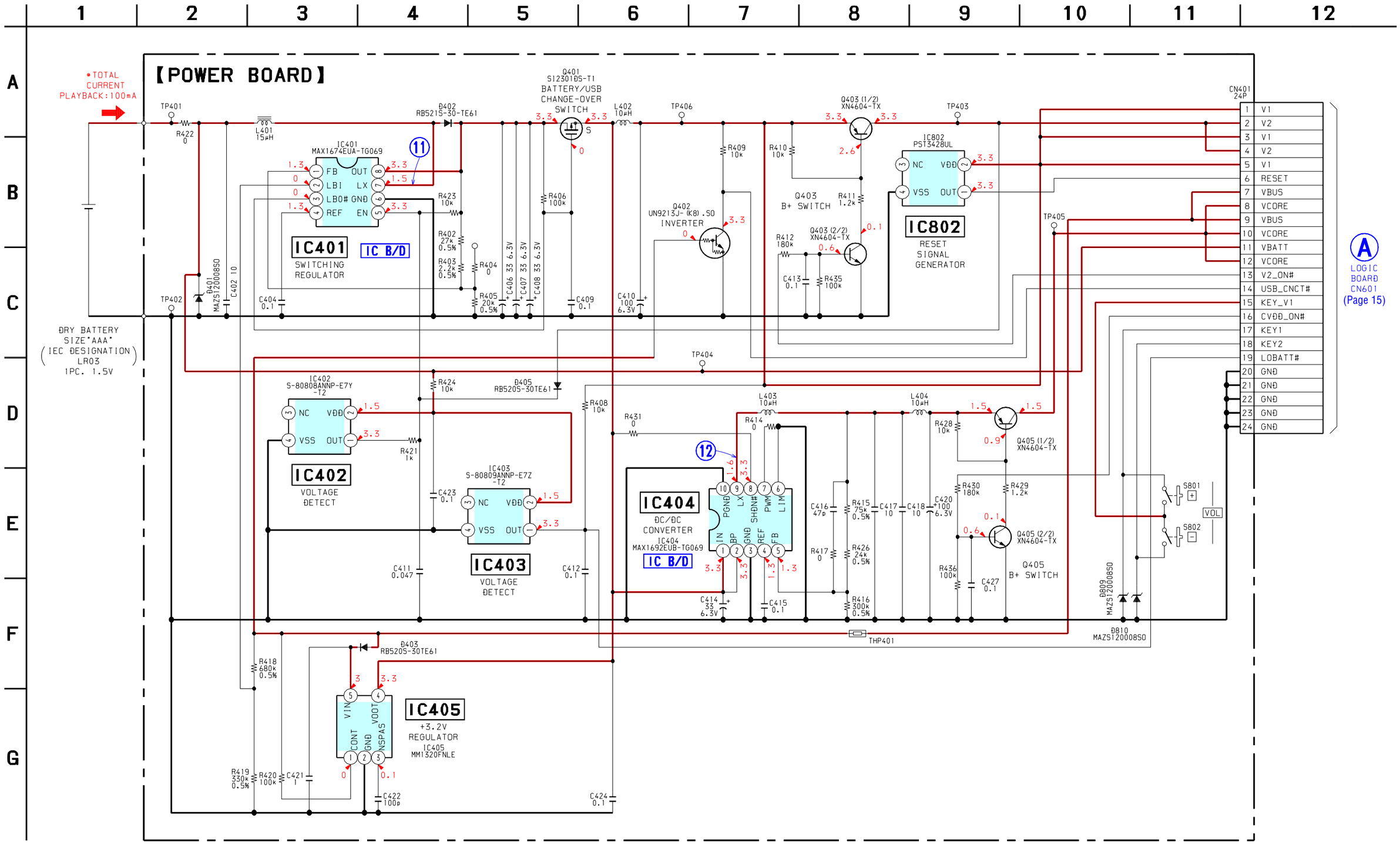
4-7. PRINTED WIRING BOARD – POWER Board – : Uses unleaded solder.

- **Semiconductor Location**

Ref. No.	Location
D401	B-3
D402	A-3
D403	A-3
D405	C-3
D809	B-2
D810	B-3
IC401	B-3
IC402	B-3
IC403	B-3
IC404	B-3
IC405	C-3
IC802	A-3
Q401	B-3
Q402	B-3
Q403	B-3
Q405	A-3



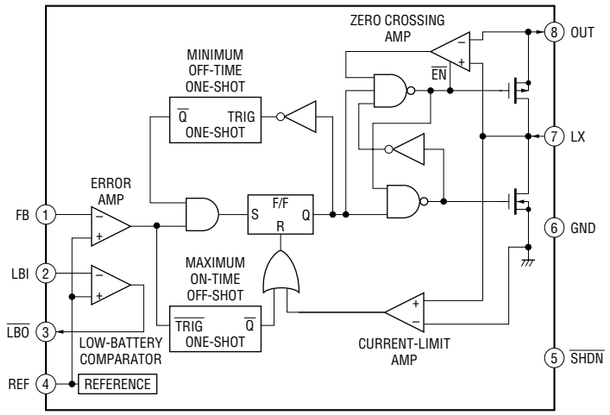
4-8. SCHEMATIC DIAGRAM – POWER Board – • See page 20 for IC Block Diagrams. • See page 21 for Waveforms.



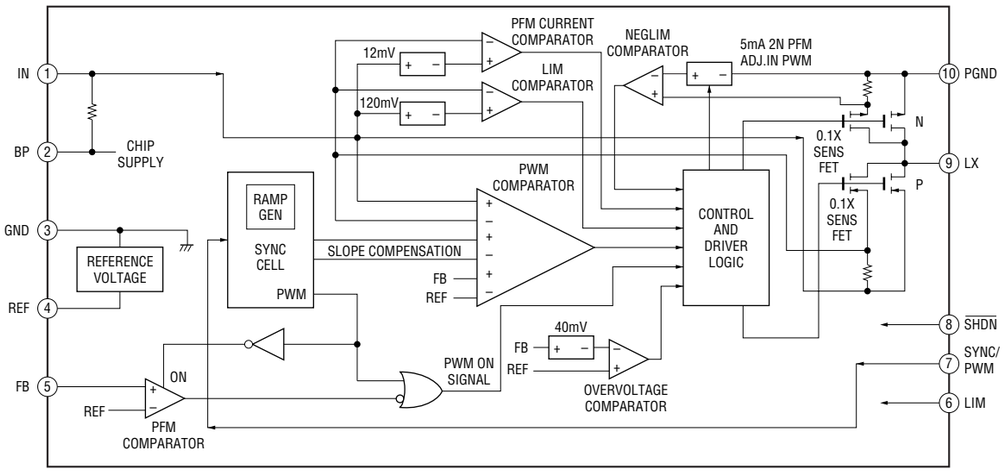
• **IC Block Diagrams**

– POWER Board –

IC401 MAX1674EUA-TG069

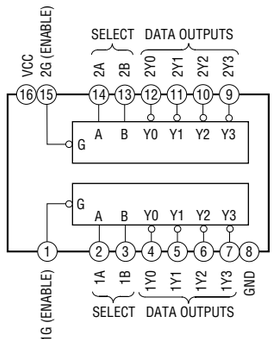


IC404 MAX1692EUB-TG069

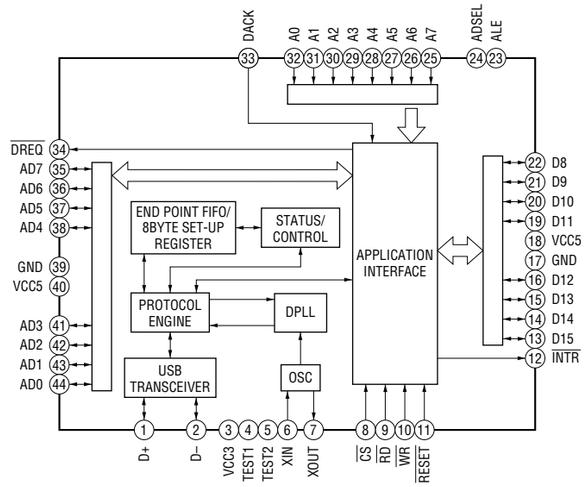


– LOGIC Board –

IC604 SN74LV139ADGVR

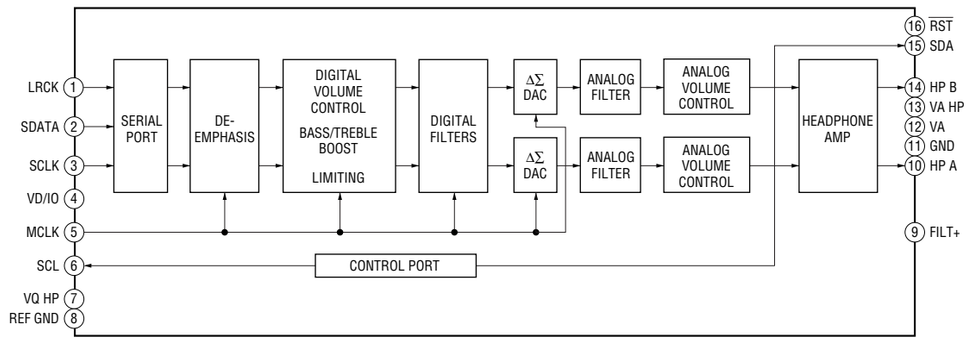

VCC
2G (ENABLE)
SELECT
DATA OUTPUTS
2A 2B 2Y0 2Y1 2Y2 2Y3
16 15 14 13 12 11 10 9
A B Y0 Y1 Y2 Y3
G
1 2 3 4 5 6 7 8
1A 1B 1Y0 1Y1 1Y2 1Y3 GND
1G (ENABLE)

IC901 ML60851CLBZ060 (Not supplied part)



– AUDIO Board –

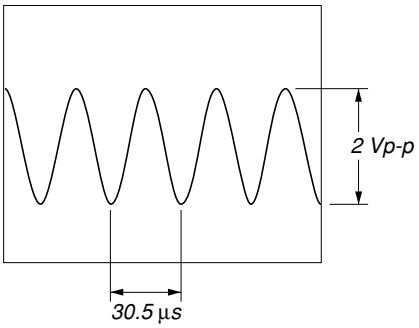
IC302 CS4343-KSR



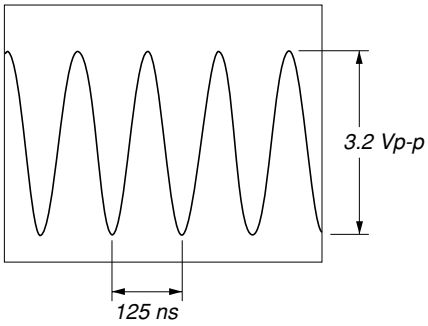
• **Waveforms**

– LOGIC Board –

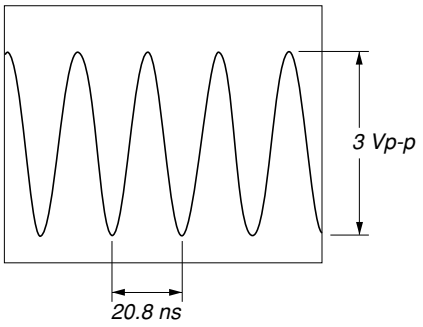
❶ IC801 ② X1



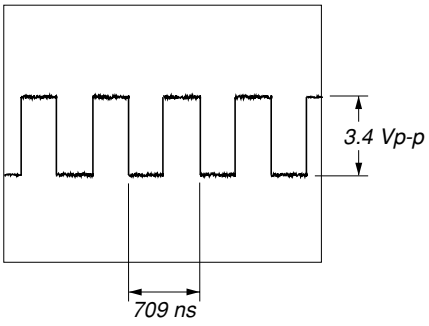
❷ IC801 ⑤ (OSC1) (When power on)



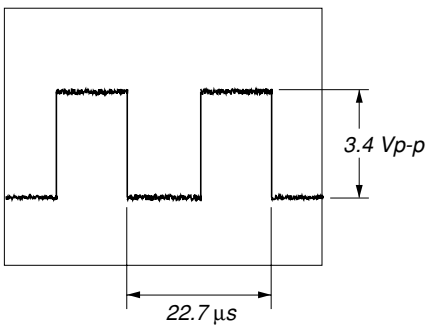
❸ IC901 ⑥ (XIN) (When power on)



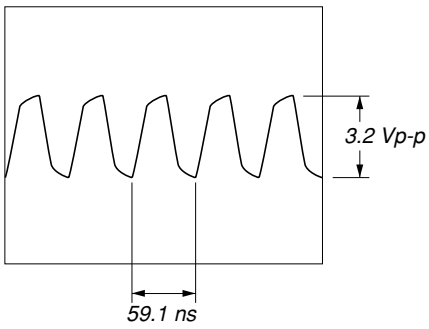
❹ IC601 ㊽ (BCLKX0)



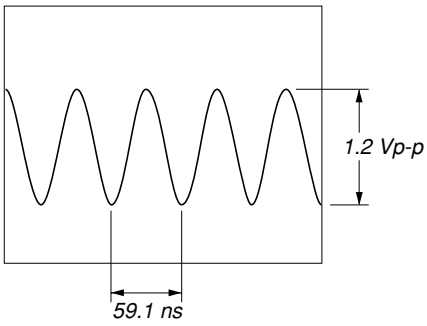
❺ IC601 ㊸ (BFSX0)



❻ IC601 ㉛ (BCLKX1)

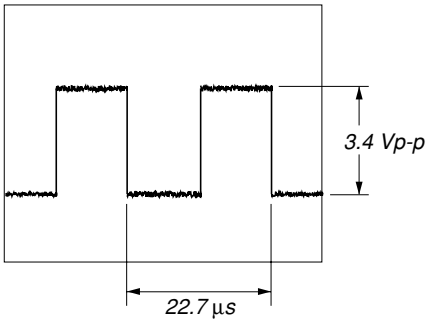


❼ IC601 ㊼ (X2/CLKIN)

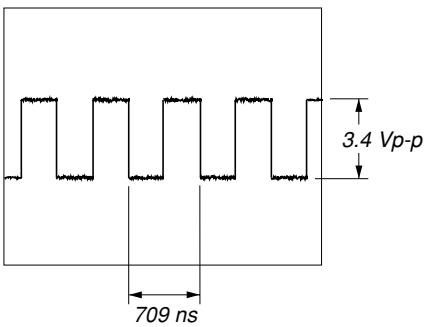


– AUDIO Board –

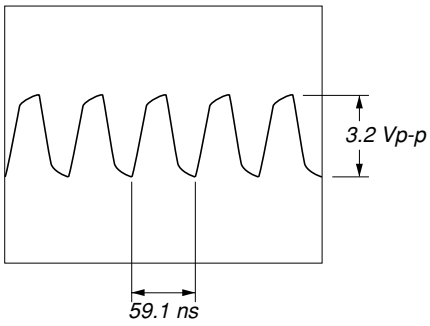
❽ IC302 ① (LRCK)



❾ IC302 ③ (SCLK)

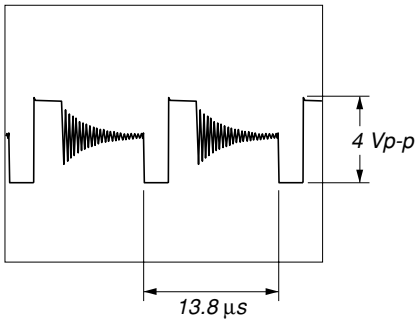


❿ IC302 ⑤ (MCLK)

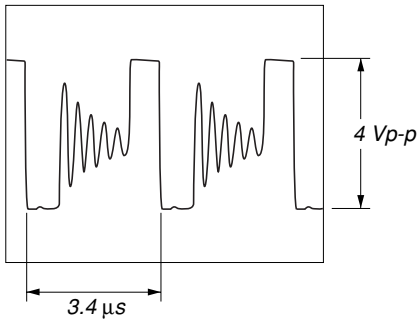


– POWER Board –

⓫ IC401 ⑦ (LX)



⓬ IC404 ⑨ (LX)



4-9. IC PIN FUNCTION DESCRIPTION

• LOGIC BOARD IC601 TMS320DA150GGU120 (DIGITAL SIGNAL PROCESSOR) (Not supplied part)

Pin No.	Pin Name	I/O	Description
1	CVSS	—	Ground terminal
2	A22	—	Address signal terminal Not used (open)
3	CVSS	—	Ground terminal
4	DVDD	—	Power supply terminal (+3.2V)
5	A10	—	Address signal terminal Not used (open)
6	HD7	O	Muting control signal output terminal "L": muting
7 to 10	A11 to A14	I	Address signal input terminal Not used (open)
11	A15	O	Read/write signal output to the 2 to 4 decoder (IC604)
12	CVDD	—	Power supply terminal (+1.5V)
13	$\overline{\text{HAS}}$	I	Address strobe signal input terminal Not used (fixed at "H")
14	DVSS	—	Ground terminal
15	CVSS	—	Ground terminal
16	CVDD	—	Power supply terminal (+1.5V)
17	$\overline{\text{HCS}}$	I	Chip select signal input terminal Not used (fixed at "H")
18	HR/$\overline{\text{W}}$	I	Read/write signal input terminal Not used (fixed at "H")
19	READY	I	Data ready signal input terminal Not used (fixed at "H")
20	$\overline{\text{PS}}$	O	Program space select signal output terminal Not used (open)
21	$\overline{\text{DS}}$	O	Data space select signal output terminal Not used (open)
22	$\overline{\text{IS}}$	O	I/O space select signal output to the USB controller (IC901)
23	R/$\overline{\text{W}}$	O	Read/write signal output to the 2 to 4 decoder (IC604)
24	$\overline{\text{MSTRB}}$	O	Memory strobe signal output terminal Not used (open)
25	$\overline{\text{IOSTRB}}$	O	I/O strobe signal output to the 2 to 4 decoder (IC604)
26	$\overline{\text{MSC}}$	O	Microstate complete signal output terminal Not used (open)
27	XF	O	External flag signal output terminal Not used (open)
28	$\overline{\text{HOLDA}}$	O	Hold acknowledge signal output terminal Not used (open)
29	$\overline{\text{IAQ}}$	O	Instruction acquisition signal output terminal Not used (open)
30	$\overline{\text{HOLD}}$	I	Hold signal input terminal Not used (fixed at "H")
31	$\overline{\text{BIO}}$	I	Branch control signal input terminal Not used (fixed at "H")
32	MP/$\overline{\text{MC}}$	I	Mode select signal input terminal Not used (fixed at "L")
33	DVDD	—	Power supply terminal (+3.2V)
34	CVSS	—	Ground terminal
35	BDR1	I	Serial data receive signal input terminal Not used (fixed at "H")
36	BFSR1	I	Frame synchronization pulse signal input terminal Not used (fixed at "H")
37	CVSS	—	Ground terminal
38	BCLKR1	O	Serial clock signal output to the CPU (IC801)
39	HCNTL0	I	Control signal input terminal Not used (fixed at "H")
40	DVSS	—	Ground terminal
41, 42	BCLKR0, BCLKR2	I	Data receive clock input terminal Not used (fixed at "H")
43, 44	BFSR0, BFSR2	I	Frame synchronization pulse signal input terminal Not used (fixed at "H")
45	BDR0	I	Serial data receive signal input from the flash ROM (IC602)
46	HCNTL1	I	Control signal input terminal Not used (fixed at "H")
47	BDR2	I	Serial data receive signal input from the EEPROM (IC603) and CPU (IC801)
48	BCLKX0	O	Serial clock signal output to the D/A converter (IC302)
49	BCLKX2	O	Serial clock signal output to the EEPROM (IC603) and CPU (IC801)
50	CVSS	—	Ground terminal

Pin No.	Pin Name	I/O	Description
51	$\overline{\text{HINT}}$	O	Interrupt request signal output terminal Not used (open)
52	CVDD	—	Power supply terminal (+1.5V)
53	BFSX0	O	LR frame signal output to the D/A converter (IC302)
54	BFSX2	O	Chip select signal output to the EEPROM (IC603)
55	HRDY	O	Ready signal output terminal Not used (open)
56	DVDD	—	Power supply terminal (+3.2V)
57	DVSS	—	Ground terminal
58	HD0	O	Enable signal output to the flash ROM (IC602)
59	BDX0	O	Serial data transmit signal output to the D/A converter (IC302)
60	BDX2	O	Serial data transmit signal output to the EEPROM (IC603) and CPU (IC801)
61	$\overline{\text{IACK}}$	O	Interrupt request signal output terminal Not used (open)
62	HBIL	—	Not used (fixed at “H”)
63	$\overline{\text{NMI}}$	I	Nonmaskable interrupt request signal input terminal Not used (fixed at “H”)
64	$\overline{\text{INT0}}$	I	Interrupt request signal input terminal Not used (fixed at “H”)
65	$\overline{\text{INT1}}$	I	Interrupt request signal input from the CPU (IC801)
66	$\overline{\text{INT2}}$	I	Interrupt request signal input from the USB controller (IC901)
67	$\overline{\text{INT3}}$	I	Interrupt request signal input terminal (connected to pin ⑥⓪ (BDX2))
68	CVDD	—	Power supply terminal (+1.5V)
69	HD1	O	Enable signal output to the flash ROM (IC602)
70	CVSS	—	Ground terminal
71	BCLKX1	O	Serial clock signal output to the D/A converter (IC302)
72	DVSS	—	Ground terminal
73	BFSX1	O	Serial data receive signal output terminal Not used (fixed at “H”)
74	BDX1	O	Serial data transmit signal output terminal Not used (open)
75	DVDD	—	Power supply terminal (+3.2V)
76	DVSS	—	Ground terminal
77	CLKMD1	I	Clock mode signal output terminal Not used (fixed at “L”)
78	CLKMD2	I	Clock mode signal output terminal Not used (fixed at “H”)
79	CLKMD3	I	Clock mode signal output terminal Not used (fixed at “L”)
80	HPI16	—	Not used (fixed at “L”)
81	HD2	O	Reset signal output to the USB controller (IC901) “L”: reset
82	TOUT	O	Timer signal output terminal Not used (open)
83	EMU0	I	Emulator signal input terminal
84	EMU1/$\overline{\text{OFF}}$	O	Emulator signal output terminal
85	TDO	O	Test data signal output terminal
86	TDI	I	Test data signal input terminal
87	$\overline{\text{TRST}}$	I	Test reset signal input terminal
88	TCK	I	Test clock input terminal
89	TMS	I	Test mode select signal input terminal
90	CVSS	—	Ground terminal
91	CVDD	—	Power supply terminal (+1.5V)
92	HPIENA	I	HPI module select signal input terminal Not used (fixed at “L”)
93	DVSS	—	Ground terminal
94	CLKOUT	O	Master clock output terminal Not used (open)
95	HD3	O	USB ON/OFF control signal output terminal “L”: ON

Pin No.	Pin Name	I/O	Description
96	X1	O	System clock output terminal (16.9344MHz)
97	X2/CLKIN	I	System clock input terminal (16.9344MHz)
98	$\overline{RS}$	I	Reset signal input to the CPU (IC801) "L": reset
99 to 104	D0 to D5	I/O	Two-way data bus with the flash ROM (IC602) and USB controller (IC901)
105	A16	—	Address signal terminal Not used (open)
106	DVSS	—	Ground terminal
107 to 110	A17 to A20	—	Address signal terminal Not used (open)
111	CVSS	—	Ground terminal
112	DVDD	—	Power supply terminal (+3.2V)
113, 114	D6, D7	I/O	Two-way data bus with the flash ROM (IC602) and USB controller (IC901)
115 to 119	D8 to D12	I/O	Two-way data bus Not used (open)
120	HD4	O	Chip select signal output to the flash ROM (IC602)
121 to 123	D13 to D15	I/O	Two-way data bus Not used (open)
124	HD5	O	Audio system power ON/OFF control signal output terminal "H": ON
125	CVDD	—	Power supply terminal (+1.5V)
126	CVSS	—	Ground terminal
127	$\overline{HDS1}$	I	Data signal input terminal Not used (fixed at "H")
128	DVSS	—	Ground terminal
129	$\overline{HDS2}$	I	Data signal input terminal Not used (fixed at "H")
130	DVDD	—	Power supply terminal (+3.2V)
131 to 134	A0 to A3	O	Address signal output to the USB controller (IC901)
135	HD6	O	Reset signal output to the D/A converter (IC302) "L": reset
136 to 139	A4 to A7	O	Address signal output to the USB controller (IC901)
140, 141	A8, A9	—	Address signal terminal Not used (open)
142	CVDD	—	Power supply terminal (+1.5V)
143	A21	—	Address signal terminal Not used (open)
144	DVSS	—	Ground terminal

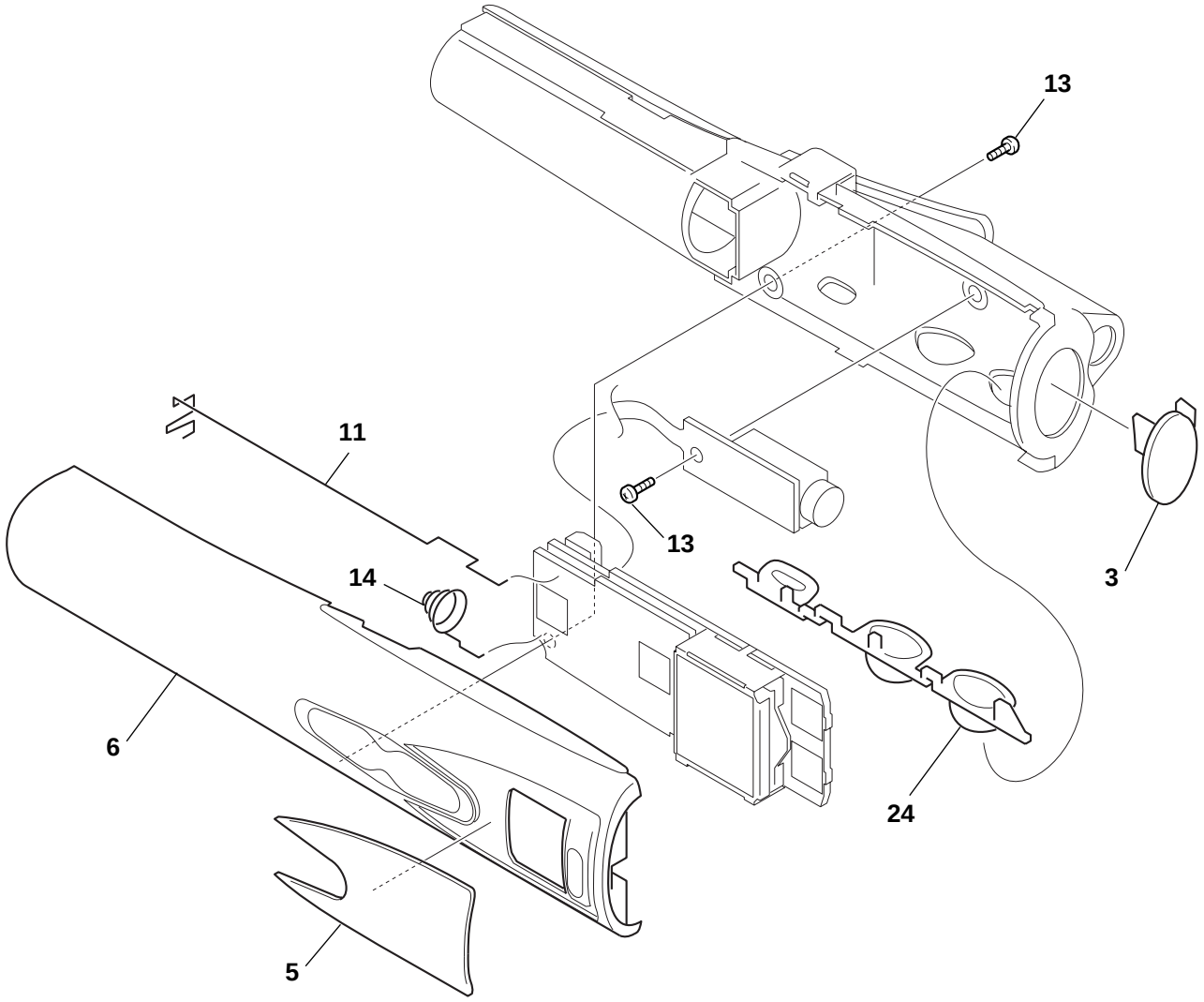
• LOGIC BOARD IC801 HD6433800A02FP (CPU)

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{IRQ1}}$	I	Voltage detect input terminal
2	X1	I	Sub system clock input terminal (32.768kHz)
3	X2	O	Sub system clock output terminal (32.768kHz)
4	VSS	—	Ground terminal
5	OSC1	O	Main system clock output terminal (8MHz)
6	OSC2	I	Main system clock input terminal (8MHz)
7	TEST	I	Test mode signal input terminal Not used (fixed at "L")
8	$\overline{\text{RES}}$	I	System reset signal input from the reset signal generator (IC802) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
9	P31	—	Not used (open)
10	P32	O	Power supply (V2) ON/OFF control signal output terminal "L": ON
11	P33	O	Interrupt request signal output to the digital signal processor (IC601)
12, 13	P34, P35	—	Not used (fixed at "L")
14	P36	O	Reset signal output to the digital signal processor (IC601) and EEPROM (IC603) "L": reset
15	P37	O	Power supply (VCORE) ON/OFF control signal output terminal "L": ON
16	VCC	—	Power supply terminal (+3.2V)
17	V1	—	Power supply terminal for the liquid crystal display (open in this set)
18	V2	—	Power supply terminal for the liquid crystal display (connected to pin ⑲ (V3))
19	V3	—	Power supply terminal for the liquid crystal display (connected to pin ⑱ (V2))
20, 21	COM4, COM3	O	Common signal output to the liquid crystal display Not used (open)
22, 23	COM2, COM1	O	Common signal output to the liquid crystal display (LCD901)
24, 25	SEG25, SEG24	O	Segment signal output to the liquid crystal display Not used (open)
26 to 40	SEG23 to SEG9	O	Segment signal output to the liquid crystal display (LCD901)
41	$\overline{\text{WKP7}}$	I	USB connection detect signal input terminal
42	$\overline{\text{WKP6}}$	I	MEGA BASS/AVLS switch (S807) input terminal "L": NORM
43	$\overline{\text{WKP5}}$	I	⏮ key (S806) input terminal
44	$\overline{\text{WKP4}}$	I	⏭ key (S805) input terminal
45	$\overline{\text{WKP3}}$	I	⏯ key (S804) input terminal
46	$\overline{\text{WKP2}}$	I	MODE key (S803) input terminal
47	$\overline{\text{WKP1}}$	I	VOL - key (S802) input terminal
48	$\overline{\text{WKP0}}$	I	VOL + key (S801) input terminal
49	P90	O	LCD back light (D801) ON/OFF control signal output terminal "H": LED ON
50 to 54	P91 to P95	—	Not used (open)
55	VSS	—	Ground terminal
56	IRQACE	I	Interrupt request signal input terminal Not used (fixed at "L")
57	SCK	I	Serial clock signal input from the digital signal processor (IC601)
58	RXD	I	Serial data receive signal input from the digital signal processor (IC601)
59	TXD	O	Serial data transmit signal output to the digital signal processor (IC601)
60	$\overline{\text{IRQ0}}$	I	Serial clock signal input from the digital signal processor (IC601)
61	AVCC	—	Power supply terminal (+3.2V) (for the analog)
62	AN0	I	Battery voltage detect input terminal
63, 64	PB1, PB2	I	Not used (fixed at "L")

SECTION 5
EXPLODED VIEWS

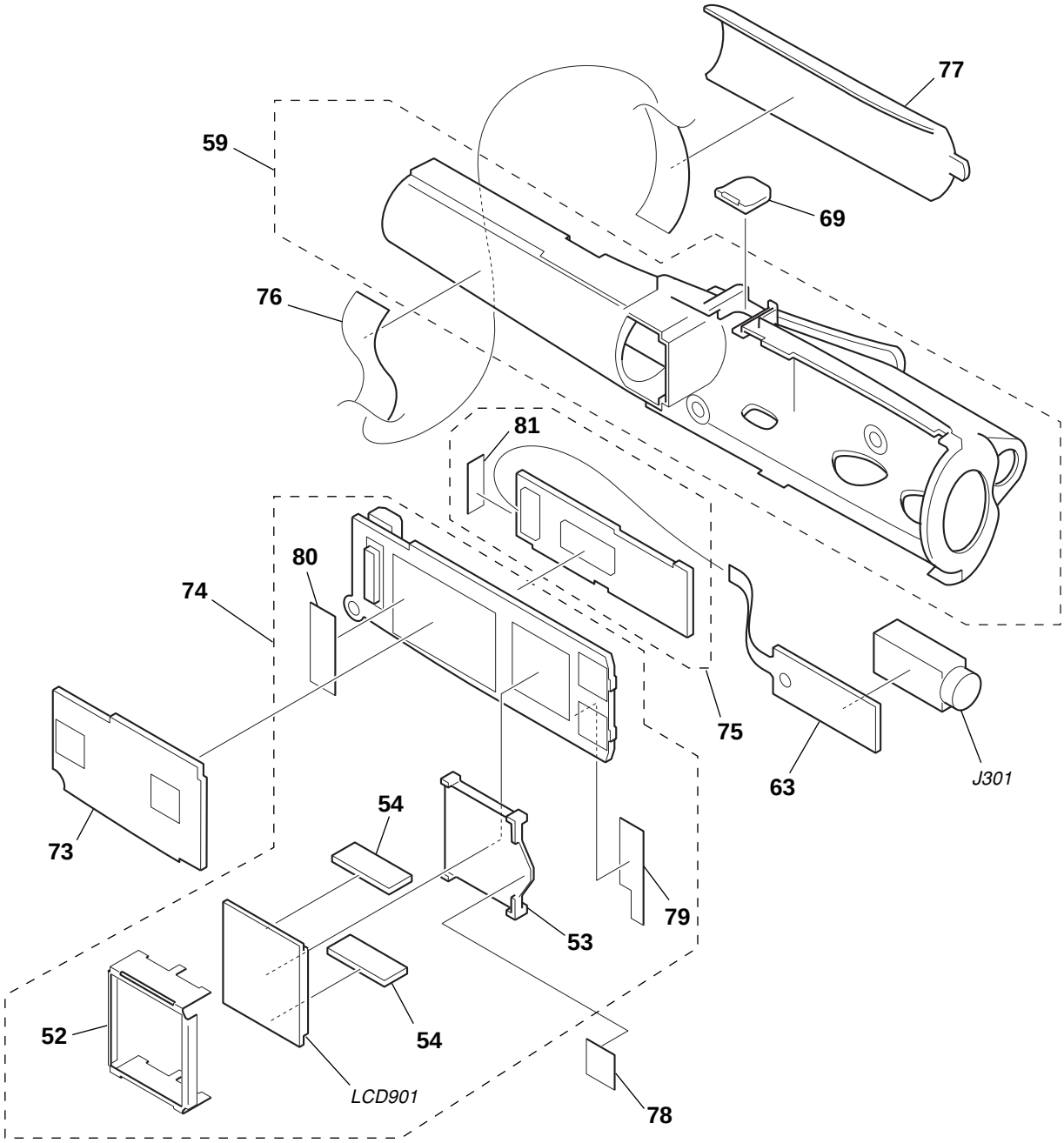
NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

5-1. UPPER CASE ASSY



Ref. No.	Part No.	Description	Remark
3	4-649-908-02	BUTTON, PLAY	
5	4-649-902-01	WINDOW, LCD	
6	X-4623-190-1	CASE ASSY, UPPER	
11	4-649-910-01	TERMINAL (+), BATTERY	
13	3-893-942-31	SCREW (1.7X4), TAPPING (B)	
14	4-649-911-01	TERMINAL (-), BATTERY	
24	4-649-905-01	BUTTON, VOLUME	

5-2. BOARD ASSY



Ref. No.	Part No.	Description	Remark
52	4-649-896-01	CASE, LCD	
53	4-649-901-01	BL UNIT	
54	1-694-771-11	CONDUCTIVE BOARD	
59	X-4623-191-2	CASE ASSY, LOWER	
63	1-680-151-11	FLEXIBLE (JACK) BOARD	
69	4-649-895-01	COVER, USB	
73	A-3323-698-A	POWER BOARD, COMPLETE	
74	A-3323-696-A	LOGIC BOARD, COMPLETE	
75	A-3323-697-A	AUDIO BOARD, COMPLETE	
76	4-649-913-01	RIBBON, BATTERY	
77	4-649-909-21	LID, BATTERY CASE	
78	3-228-267-01	SHEET, LIGHT INTERCEPTION	
79	3-228-357-01	SHEET, DSP	
80	3-230-336-01	SHEET (LARGE), ELECTROMAGNETIC	
81	3-230-337-01	SHEET (SMALL), ELECTROMAGNETIC	
J301	1-815-117-11	JACK (🎧 (HEADPHONE))	
LCD901	1-804-249-11	DISPLAY PANEL, LIQUID CRYSTAL	

SECTION 6
ELECTRICAL PARTS LIST

AUDIO **JACK**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-3323-697-A	AUDIO BOARD, COMPLETE			
		**********			
	3-230-337-01	SHEET (SMALL), ELECTROMAGNETIC			
		< CAPACITOR >			
C101	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C102	1-135-868-11	TANTALUM CHIP	220uF	20%	2.5V
C201	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C202	1-135-868-11	TANTALUM CHIP	220uF	20%	2.5V
C301	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C302	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C303	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C304	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C305	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C306	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C307	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C310	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C311	1-135-337-11	TANTALUM CHIP	1uF	20%	6.3V
C312	1-135-337-11	TANTALUM CHIP	1uF	20%	6.3V
C313	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C314	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C315	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN301	1-815-120-21	CONNECTOR, BOARD TO BOARD 24P			
CN302	1-815-118-21	CONNECTOR, FPC (ZIF) 5P			
		< DIODE >			
D101	8-719-056-59	DIODE MAZS120008SO			
D201	8-719-056-59	DIODE MAZS120008SO			
D804	8-719-056-59	DIODE MAZS120008SO			
		< FERRITE BEAD >			
* FB301	1-469-229-22	FERRITE	0uH		
* FB302	1-469-230-21	INDUCTOR	0uH		
		< IC >			
IC301	8-759-656-53	IC MM1426CNLE			
IC302	8-759-656-51	IC CS4343-KSR			
		< COIL >			
L101	1-469-527-11	INDUCTOR	47uH		
L201	1-469-527-11	INDUCTOR	47uH		
L301	1-412-991-31	INDUCTOR	10uH		
		< TRANSISTOR >			
Q101	8-729-047-68	TRANSISTOR	2SK1830-TE85L		
Q102	8-729-046-45	TRANSISTOR	SI2302DS-T1		
Q201	8-729-047-68	TRANSISTOR	2SK1830-TE85L		
Q202	8-729-046-45	TRANSISTOR	SI2302DS-T1		
Q301	8-729-426-06	TRANSISTOR	XP1110-TXE		
Q302	8-729-012-78	TRANSISTOR	XP2501-TX		
		< RESISTOR >			
R101	1-218-942-11	RES-CHIP	120	5%	1/16W
R102	1-218-942-11	RES-CHIP	120	5%	1/16W
R103	1-218-965-11	RES-CHIP	10K	5%	1/16W
R104	1-220-803-81	RES-CHIP	4.7	5%	1/16W
R105	1-218-977-11	RES-CHIP	100K	5%	1/16W
R106	1-218-990-11	SHORT	0		
R201	1-218-942-11	RES-CHIP	120	5%	1/16W
R202	1-218-942-11	RES-CHIP	120	5%	1/16W
R203	1-218-965-11	RES-CHIP	10K	5%	1/16W
R204	1-220-803-81	RES-CHIP	4.7	5%	1/16W
R205	1-218-977-11	RES-CHIP	100K	5%	1/16W
R206	1-218-990-11	SHORT	0		
R301	1-218-965-11	RES-CHIP	10K	5%	1/16W
R302	1-218-973-11	RES-CHIP	47K	5%	1/16W
R303	1-218-972-11	RES-CHIP	39K	5%	1/16W
R304	1-218-989-11	RES-CHIP	1M	5%	1/16W
R305	1-218-985-11	RES-CHIP	470K	5%	1/16W
R306	1-218-969-11	RES-CHIP	22K	5%	1/16W
		< SWITCH >			
S808	1-771-449-11	SWITCH, SLIDE (HOLD)			
		**********			
	(Not supplied)	JACK BOARD			
		**********			
	1-680-151-11	PWB, FLEXIBLE (JACK)			
		< JACK >			
J301	1-815-117-11	JACK (🎧 (HEADPHONE))			
		**********			

LOGIC

Ref. No.	Part No.	Description			Remark
	A-3323-696-A	LOGIC BOARD, COMPLETE			
		**********			
	1-694-771-11	CONDUCTIVE BOARD			
	3-228-357-01	SHEET, DSP			
	3-230-336-01	SHEET (LARGE), ELECTROMAGNETIC			
	4-649-896-01	CASE, LCD			
	4-649-901-01	BL UNIT			
		< CAPACITOR >			
C601	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C602	1-127-895-11	TANTALUM CHIP	22uF	20%	4V
C603	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C608	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C609	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C613	1-164-848-11	CERAMIC CHIP	8PF	0.5PF	16V
C615	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C618	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C619	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C620	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C621	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C622	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C623	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C801	1-117-919-11	TANTALUM CHIP	10uF	20%	6.3V
C802	1-164-843-11	CERAMIC CHIP	3PF	0.25PF	16V
C804	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C805	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C806	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C807	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C808	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C809	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C810	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C811	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C812	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C813	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C814	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C815	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C816	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C901	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C902	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C903	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN601	1-815-119-21	CONNECTOR, BOARD TO BOARD 24P			
CN602	1-815-119-21	CONNECTOR, BOARD TO BOARD 24P			
CN901	1-793-642-21	CONNECTOR (USB) (4P), SQUARE			
		< DIODE >			
D801	8-719-082-67	LED FY1111C-634-TR (LCD BACK LIGHT)			
D802	8-719-069-29	DIODE RB520S-30TE61			
D901	8-719-056-59	DIODE MAZS120008SO			
D902	8-719-056-59	DIODE MAZS120008SO			
D903	8-719-069-29	DIODE RB520S-30TE61			
		< IC >			
IC601	(Not supplied)	IC TMS320DA150GGU120			
IC602	(Not supplied)	IC TH58512FTI (ELY)			
IC603	(Not supplied)	IC 25LC640XT-I/ST			
IC604	8-759-713-60	IC SN74LV139ADGVR			

Ref. No.	Part No.	Description			Remark
IC801	8-759-713-59	IC HD6433800A02FP			
IC901	(Not supplied)	IC ML60851CLBZ060			
		< LIQUID CRYSTAL DISPLAY >			
LCD901	1-804-249-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q901	8-729-037-61	TRANSISTOR	UN9113J- (K8).SO		
		< RESISTOR >			
R601	1-218-965-11	RES-CHIP	10K	5%	1/16W
R602	1-218-965-11	RES-CHIP	10K	5%	1/16W
R603	1-218-990-11	SHORT	0		
R604	1-218-965-11	RES-CHIP	10K	5%	1/16W
R605	1-218-985-11	RES-CHIP	470K	5%	1/16W
R607	1-218-953-11	RES-CHIP	1K	5%	1/16W
R609	1-218-965-11	RES-CHIP	10K	5%	1/16W
R610	1-218-965-11	RES-CHIP	10K	5%	1/16W
R612	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R801	1-218-944-11	RES-CHIP	180	5%	1/16W
R802	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R803	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R804	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R805	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R806	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R808	1-218-965-11	RES-CHIP	10K	5%	1/16W
R809	1-218-965-11	RES-CHIP	10K	5%	1/16W
R810	1-218-965-11	RES-CHIP	10K	5%	1/16W
R811	1-218-977-11	RES-CHIP	100K	5%	1/16W
R812	1-218-941-11	RES-CHIP	100	5%	1/16W
R813	1-218-941-11	RES-CHIP	100	5%	1/16W
R814	1-218-946-11	RES-CHIP	270	5%	1/16W
R815	1-218-989-11	RES-CHIP	1M	5%	1/16W
R817	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R818	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R819	1-218-941-11	RES-CHIP	100	5%	1/16W
R820	1-218-941-11	RES-CHIP	100	5%	1/16W
R821	1-218-941-11	RES-CHIP	100	5%	1/16W
R822	1-218-941-11	RES-CHIP	100	5%	1/16W
R823	1-218-941-11	RES-CHIP	100	5%	1/16W
R824	1-218-941-11	RES-CHIP	100	5%	1/16W
R825	1-218-941-11	RES-CHIP	100	5%	1/16W
R826	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R827	1-218-961-11	RES-CHIP	4.7K	5%	1/16W
R829	1-218-941-11	RES-CHIP	100	5%	1/16W
R830	1-218-985-11	RES-CHIP	470K	5%	1/16W
R831	1-218-953-11	RES-CHIP	1K	5%	1/16W
R901	1-208-643-11	RES-CHIP	22	5%	1/16W
R902	1-208-643-11	RES-CHIP	22	5%	1/16W
R903	1-218-955-11	RES-CHIP	1.5K	5%	1/16W
R904	1-218-989-11	RES-CHIP	1M	5%	1/16W
R905	1-218-990-11	SHORT	0		
R906	1-218-990-11	SHORT	0		
R907	1-218-953-11	RES-CHIP	1K	5%	1/16W
R908	1-218-985-11	RES-CHIP	470K	5%	1/16W
R909	1-218-985-11	RES-CHIP	470K	5%	1/16W

LOGIC POWER

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S803	1-762-333-21	SWITCH, TACTILE (MODE)			
S804	1-762-333-21	SWITCH, TACTILE (►■)			
S805	1-762-333-21	SWITCH, TACTILE (►►I)			
S806	1-762-333-21	SWITCH, TACTILE (I◄◄)			
S807	1-762-333-21	SWITCH, TACTILE (MEGA BASS/AVLS)			
		< VARISTOR >			
VDR801	1-803-742-21	VARISTOR, CHIP			
VDR802	1-803-742-21	VARISTOR, CHIP			
VDR803	1-803-742-21	VARISTOR, CHIP			
VDR804	1-803-742-21	VARISTOR, CHIP			
VDR805	1-803-742-21	VARISTOR, CHIP			
		< VIBRATOR >			
X601	1-781-746-21	VIBRATOR, CRYSTAL (16.9344MHz)			
X801	1-767-994-23	VIBRATOR, CRYSTAL (32.768kHz)			
X802	1-795-100-21	VIBRATOR, CERAMIC (8MHz)			
X901	1-781-620-21	VIBRATOR, CERAMIC (48MHz)			
**********					
	A-3323-698-A	POWER BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C402	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C404	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C406	1-137-763-21	TANTALUM CHIP	33uF	20%	6.3V
C407	1-137-763-21	TANTALUM CHIP	33uF	20%	6.3V
C408	1-137-763-21	TANTALUM CHIP	33uF	20%	6.3V
C409	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C410	1-128-964-11	TANTALUM CHIP	100uF	20%	6.3V
C411	1-119-923-11	CERAMIC CHIP	0.047uF	10%	10V
C412	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C413	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C414	1-137-763-11	TANTALUM CHIP	33uF	20%	6.3V
C415	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C416	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C417	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C418	1-125-817-11	CERAMIC CHIP	10uF	10%	6.3V
C420	1-128-964-11	TANTALUM CHIP	100uF	20%	6.3V
C421	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C422	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C423	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C424	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C427	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
		< CONNECTOR >			
CN401	1-815-120-21	CONNECTOR, BOARD TO BOARD 24P			
		< DIODE >			
D401	8-719-056-59	DIODE MAZS120008SO			
D402	8-719-071-34	DIODE RB521S-30-TE61			
D403	8-719-069-29	DIODE RB520S-30TE61			
D405	8-719-069-29	DIODE RB520S-30TE61			
D809	8-719-056-59	DIODE MAZS120008SO			
D810	8-719-056-59	DIODE MAZS120008SO			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC401	8-759-656-52	IC MAX1674EUA-TG069			
IC402	8-759-572-21	IC S-80808ANNP-E7Y-T2			
IC403	8-759-530-11	IC S-80809ANNP-E7Z-T2			
IC404	8-759-713-51	IC MAX1692EUB-TG069			
IC405	8-759-676-78	IC MM1320FNLE			
IC802	8-759-659-13	IC PST3428UL			
		< COIL >			
L401	1-416-944-21	COIL, CHOKE	15uH		
L402	1-414-398-11	INDUCTOR	10uH		
L403	1-419-627-21	INDUCTOR	10uH		
L404	1-414-398-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q401	8-729-046-75	TRANSISTOR	SI2301DS-T1		
Q402	8-729-037-74	TRANSISTOR	UN9213J- (K8).SO		
Q403	8-729-425-25	TRANSISTOR	XN4604-TX		
Q405	8-729-425-25	TRANSISTOR	XN4604-TX		
		< RESISTOR >			
R402	1-218-970-11	METAL CHIP	27K	0.5%	1/16W
R403	1-208-691-11	METAL CHIP	2.2K	0.5%	1/16W
R404	1-218-990-11	SHORT	0		
R405	1-218-878-11	METAL CHIP	20K	0.5%	1/16W
R406	1-218-977-11	RES-CHIP	100K	5%	1/16W
R408	1-218-965-11	RES-CHIP	10K	5%	1/16W
R409	1-218-965-11	RES-CHIP	10K	5%	1/16W
R410	1-218-965-11	RES-CHIP	10K	5%	1/16W
R411	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R412	1-218-980-11	RES-CHIP	180K	5%	1/16W
R414	1-218-990-11	SHORT	0		
R415	1-218-892-11	METAL CHIP	75K	0.5%	1/16W
R416	1-208-670-11	METAL CHIP	300K	0.5%	1/16W
R417	1-218-990-11	SHORT	0		
R418	1-208-955-11	METAL CHIP	680K	0.5%	1/16W
R419	1-208-947-11	METAL CHIP	330K	0.5%	1/16W
R420	1-218-977-11	RES-CHIP	100K	5%	1/16W
R421	1-218-953-11	RES-CHIP	1K	5%	1/16W
R422	1-218-990-11	SHORT	0		
R423	1-218-965-11	RES-CHIP	10K	5%	1/16W
R424	1-218-965-11	RES-CHIP	10K	5%	1/16W
R426	1-208-920-11	METAL CHIP	24K	0.5%	1/16W
R428	1-218-965-11	RES-CHIP	10K	5%	1/16W
R429	1-218-954-11	RES-CHIP	1.2K	5%	1/16W
R430	1-218-980-11	RES-CHIP	180K	5%	1/16W
R431	1-218-990-11	SHORT	0		
R435	1-218-977-11	RES-CHIP	100K	5%	1/16W
R436	1-218-977-11	RES-CHIP	100K	5%	1/16W
		< SWITCH >			
S801	1-762-333-21	SWITCH, TACTILE (VOL +)			
S802	1-762-333-21	SWITCH, TACTILE (VOL -)			
		< THERMISTOR (POSITIVE) >			
THP401	1-803-870-21	THERMISTOR, POSITIVE			
**********					

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-757-592-11	CORD (WITH PLUG) (HEADPHONES/EARPHONES EXTENSION)	
	1-792-297-12	CABLE, CONNECTION (USB)	
	3-226-925-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-226-925-21	MANUAL, INSTRUCTION (FRENCH)	
	3-226-925-31	MANUAL, INSTRUCTION (GERMAN)	
	3-227-797-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-227-797-21	MANUAL, INSTRUCTION (FRENCH)	
	3-227-797-31	MANUAL, INSTRUCTION (GERMAN)	
	3-228-278-21	SOFT (CD-ROM), APPLICATION	
	4-650-235-01	STRAP, NECK	
	8-953-218-92	RECEIVER,EAR MDRE838SP/SK1	

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.03	New